MINISTRY OF NATURAL RESOURCES

Niagara District

LAND USE GUIDELINES

Ontario

Ministry of Natural Resources

Hon. Alan W. Pope
Minister

W. T. Foster
Deputy Minister

1983

Map 1

NIAGARA DISTRICT

REGIONAL SETTING

10 0 10 30 50mi
10 0 10 20 30 40km

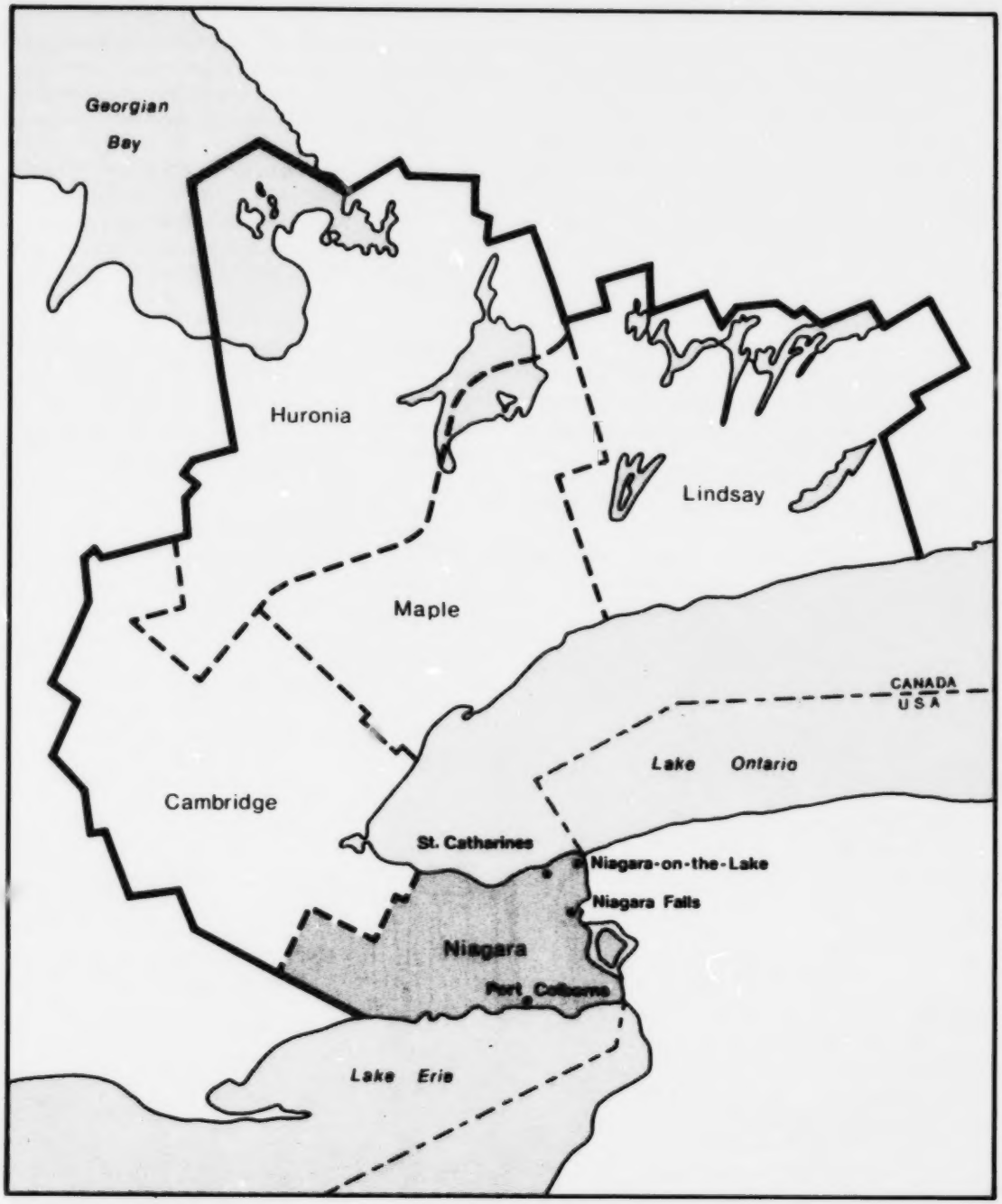
N

LEGEND

MINISTRY of NATURAL RESOURCES REGIONAL BOUNDARY

MINISTRY of NATURAL RESOURCES DISTRICT BOUNDARY

NIAGARA DISTRICT



FOREWORD

The Ministry of Natural Resources has a primary responsibility for the management of the province's natural resources, in particular those related to resource development and outdoor recreation.

This document will serve as a design for integrated resource development in the Niagara District. It is also intended to provide others with an understanding of the ministry's mandate and its programs which rely on both Crown and private lands for success.

To ensure an integrated approach the *Niagara District Land Use Guidelines* identify where and in what manner the ministry may use Crown land, and to what extent it may wish to suggest uses of private land, in working towards the achievement of ministry objectives.

For Crown land the ministry must consider the land and water requirements for both its own programs and those of other government agencies. This will require ongoing liaison with these other agencies. The ministry will continue to consult with private landowners and local municipalities since the latter have the responsibility for control of private land use.

The program targets and approaches outlined in this document follow the overall direction outlined in the ministry's *Southern Ontario Co-ordinated Program Strategy.* The *Land Use Guidelines* may serve as one of the sources of information for ministry involvement in the planning process of municipalities and other agencies. It is recognized, however, that this document has no legal status.

Planning is a continuous process and must be responsive to changing needs, information and technology. Thus the targets and strategies presented in this document are subject to revision based on such factors as changes in government policy, new or refined resource information, and significant changes to land use in other planning documents. To accommodate changes the *Land Use Guidelines* will normally be reviewed every ten years and will involve full public consultation.

Comments may be addressed to the District Manager at any time.

Michèle Fordyce

Regional Director
Central Region

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I INTRODUCTION

Niagara District includes all of the Regional Municipality of Niagara and the majority of the Towns of Haldimand and Dunnville located in the Regional Municipality of Haldimand-Norfolk (Map 1). The Niagara District resource base is subject to many demands by private individuals and a large number of public agencies. The potential for competing, conflicting or overlapping resource management objectives and plans is considerable and continues to increase as the resources potentially available diminish.

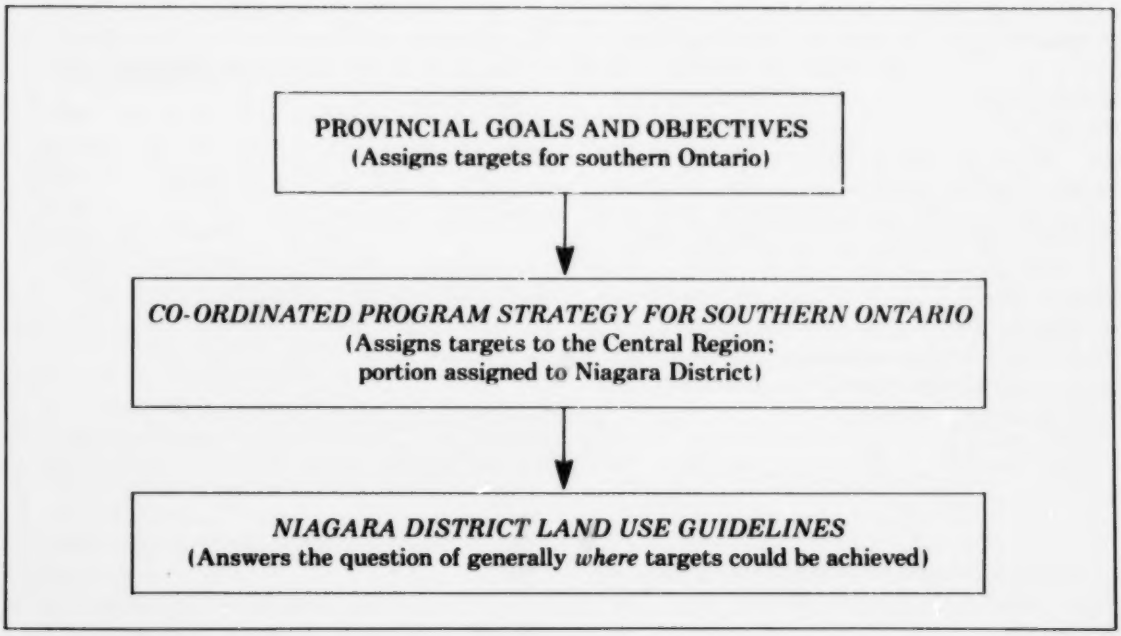
The Ministry of Natural Resources is responsible for providing the people of Ontario with resource development and outdoor recreation opportunities; and managing, protecting and conserving public lands and waters.

This document defines *what* Niagara District intends to achieve in order to assist in meeting its responsibilities, *where* the ministry hopes to meet its resource objectives in Niagara District and *how* the ministry's activities should be integrated with other resource user interests to avoid conflicts.

Information on the Niagara District resource base was collected from field reconnaisance, air photograph interpretations and previously completed studies. The resource data was mapped and compared with other interests in the land base such as planning and other agency concerns. From these analyses important resource areas were identified and guidelines for the management of these areas were prepared.

This document adheres to the broad guidelines set by the ministry's *Southern Ontario Co-ordinated Program Strategy* (Table 1). The district *Land Use Guidelines* provides a basis for the preparation of resource management plans and work program plans.

TABLE 1 PLANNING HIERARCHY OF THE MINISTRY OF NATURAL RESOURCES


PROVINCIAL GOALS AND OBJECTIVES
(Assigns targets for southern Ontario)
CO-ORDINATED PROGRAM STRATEGY FOR SOUTHERN ONTARIO
(Assigns targets to the Central Region;
portion assigned to Niagara District)
NIAGARA DISTRICT LAND USE GUIDELINES
(Answers the question of generally where targets could be achieved)

The ministry recognizes that private landowners, other government agencies, municipalities, conservation authorities and interest groups are key partners in any effort to achieve effective and co-ordinated resource management. The ministry will continue to work with these groups, and especially with municipalities, through the district's plan input and review program to ensure that resource values are considered in local planning documents.

The ministry recognizes that the planning control of private land in municipalities is exercised by the municipalities under the authority of the *Planning Act* administered by the Ministry of Municipal Affairs and Housing.

There will be instances when the ministry and others, for example another government agency, will have different intentions for the same area. When such situations are identified the ministry will enter into negotiations to arrive at an acceptable solution.

The way in which the district hopes to work with municipalities, conservation authorities, and other agencies (for example the Niagara Escarpment Commission, and the Ontario Ministry of Agriculture and Food) is outlined in the implementation section of this report.

In southern Ontario, public involvement in ministry planning began with the development of the *Southern Ontario Co-ordinated Program Strategy*, which outlines the objectives, targets and general direction which the ministry proposes to pursue.

Public consultation in the preparation of the *Niagara District Land Use Guidelines* began in 1981 when meetings were held with municipalities and conservation authorities in the district to discuss this ministry's resource management activities and introduce the strategy process. Background information open houses were held in June 1982 to provide the general public with an overview of the ministry's role and responsibilities, and a perspective to assist in the review of the draft *Niagara District Land Use Strategy*[1] which was nearing completion. Comments on the accuracy of the district's information and any problems or issues the public felt should be addressed during the process were solicited.

In July, 1982 a draft *Niagara District Land Use Strategy* was released and in August additional open houses were held to explain the direction proposed in the *Land Use Strategy* and invite public comment. In addition to receiving many verbal and written comments as a result of the open houses, the district held follow-up meetings with municipalities at their request. Based on the analysis and evaluation of all the public input received, this document was prepared.

Copies of all comments received are available for viewing at the Niagara District office, the ministry's main office public reading room and the Legislative Library at Queen's Park. Details of the public consultation program are found in an appendix to this report.

The *Land Use Guidelines* outlines how the ministry hopes to achieve its targets in Niagara District. Targets provide a measurable indication of the degree of achievement of certain ministry program policies.

It is not intended that all targets be achieved immediately. The intent is to aim for target achievement over the next 20 to 40 years. However, a number of factors may affect achievement of the stated targets including:

- validity of the original assumptions on which the target was based;
- legislative approval of necessary funding and staffing required to carry out the level of resource management on which target achievement was based;
- changing economic and social conditions on a local or provincial basis;
- new or improved inventory and information which could result in a change of the original estimates; and
- a more thorough analysis of original information.

Where there are changes in targets, whether for the above or other reasons, this document will be amended accordingly.

The planning process permits consideration of amendments or informal reviews at any time. These reviews or amendments may be initiated by the ministry or the public.

This document is best viewed as a working guideline which will be subject to review and re-evaluation.

(1) Niagara District Land Use Strategy** was the former name of the **Niagara District Land Use Guidelines.

Direction for ministry activities in Niagara District is provided in two chapters: General Policies, and Specific Policies. The general policies, which are outlined in the following chapter, deal with integrated resource management, public safety, environment and energy.

The ministry is committed to these policies. Contributions will be made by all ministry programs. Specific policies, which are presented in Chapter III, provide additional direction to specific ministry program activities.

A: integrated resource management

1. POLICY STATEMENT

Programs will be integrated to ensure the efficient use of land and water to achieve ministry objectives.

2. STRATEGY

- apply the concept of multiple use to land and water resource management. This means that the ministry will normally undertake two or more compatible activities on the same major areas concurrently or sequentially over time; and recognize that, in some circumstances, management of areas for a single purpose such as extraction, protection or recreation is necessary;
- ensure that each program contributes, to the extent possible, to the achievement of other program objectives. Individual area management plans, including water management plans, will be directed to achieving as many ministry objectives as possible to ensure integrated management and increased efficiency;
- permit interim use of candidate parks providing park values are protected. Uses and facilities which complement the achievement of park objectives will be encouraged; uses which have no significant negative impact on the long term achievement of park objectives will be permitted with judicious controls; and uses which would conflict with the long term achievement of park objectives will be prohibited; and
- apply the resource management integration guidelines outlined in each program section.

B: public safety

1. POLICY STATEMENT

The ministry will seek to eliminate loss of life and to minimize property damage and community disruption resulting from floods, erosion, earth slippage and forest fires.

The ministry will seek to eliminate injury and loss of life from hazards around abandoned pits, quarries and mine shafts and from abandoned oil and gas wells.

The ministry will promote the safe pursuit of outdoor recreation and resource production activities.

2. DISCUSSION

The ministry's actions regarding flood hazards are guided by provincial floodplain management policy.

In Niagara District, public safety concerns related to flooding, erosion and earth slippage are dealt with in cooperation with the conservation authorities. Through plan input and review the district attempts to ensure that development avoids areas susceptible to these hazards or occurs only with adequate protection and safeguards. Other actions that the ministry takes include participating in contingency planning and cooperating with conservation authorities and other agencies in the identification of floodplains and other hazardous sites in developed and developing areas.

The Ministry of Natural Resources has responsibility for forest fire management in Ontario. This responsibility is shared with municipalities and with landowners and resource users.

The fire management program of the ministry performs a support function that provides expert knowledge and specialized services in matters of fire control and fire use to groups within and outside the ministry. These services relate to preventing the occurrence of wildfires and controlling those wildfires that threaten important resource areas.

In Niagara District forest fire protection services are normally provided by municipal agencies. The ministry can play a significant role in developing municipal expertise in minimizing risks from forest fires and in emergency planning.

3. STRATEGY

The strategy for the achievement of the public safety policy statement is discussed in the program strategy sections.

C: environment

1. POLICY STATEMENT

The ministry will conduct its activities in an environmentally responsible manner.

2. DISCUSSION

All programs of the ministry share in the responsible management of natural resources. This involves managing renewable resources on a biologically sound basis, and managing non-renewable resources to meet current demands, while giving attention to anticipated future needs. Where environmental impacts are inevitable, mitigating measures and/or rehabilitation are used.

All programs contribute to achieving the broad objective of identifying and conserving unique, representative or endangered physical, biological, cultural and historical features of the province.

The ministry is concerned about the potential impact of acid rain on Ontario's resources. Although it is believed that acid rain will have a relatively small effect on fisheries in Niagara District, the ministry does have concerns with respect to the possible effects of acid rain on vegetation. The ministry will work closely with other government agencies to monitor the effect of contaminants such as acid rain on natural resources.

Wetlands are recognized by the ministry to be important natural resources. The ministry will be issuing a specific wetlands policy in the near future. This policy will encourage consideration of all wetland values in municipal planning and the planning of other agencies.

3. STRATEGY

The strategy for the achievement of the environment policy statement is discussed in the program strategy sections.

D: energy

1. POLICY STATEMENT

The ministry will undertake its activities so as to contribute to provincial energy objectives.

2. DISCUSSION

Ontario is committed to a major effort to increase its energy self sufficiency. The district's major contribution will be the encouragement of fuelwood production and consumption by supplementing heating with fuelwood. The district also has a role to play in areas such as energy conservation.

The Welland Canal in Port Dalhousie has been identified by Ontario Hydro as a low priority hydraulic site. While this site has a fourteen foot head with an average potential output of 6 megawatts, it is unlikely that a detailed study of the site will occur in the next ten years.

3. STRATEGY

The strategy for the achievement of the energy policy statement is discussed in the program strategy sections.

Niagara District has been assigned specific production targets necessary to meet provincial requirements for natural resources. The numerical targets are summarized in Table 2.

The capacity of the district to achieve these targets is discussed in the resource analysis sections which follow. The areas key to achieving the resource production targets and other ministry objectives are shown on the program strategy maps and discussed in this chapter. Strategies for managing these important resource areas are proposed in the program strategy sections and in the implementation chapter.

TABLE 2 NIAGARA DISTRICT PRODUCTION TARGETS

Program	Target Year 2000	Target Year 2020
Forestry		28,300 cubic metres (1 million cu. ft./yr.)
Mineral Aggregate	143 million tonnes (159 million tons) cumulative supply available 1982-2000	
Fisheries		
Sport Fishing	326,000 opportunities/yr.	
Commercial Fishing	269,000 kg/yr. (591,800 lbs.)	
Bait Fishing	4.42 million dozen/yr.	
Wildlife		
Small Game Hunting	87,100 small game hunting opportunities/yr.	
Big Game Hunting	14,900 big game hunting opportunities/yr.	
Waterfowl Hunting	30,700 waterfowl hunting opportunities/yr.	
Trapping	15,400 pelts/yr.	
Parks and Recreation		
Day Use Recreation	293,000 picnicking opportunities/yr. 416,900 swimming opportunities/yr.	
Extended Use Recreation	54,400 camping opportunities/yr.	
Protection	To protect provincially significant earth and life science features and landscape-related pre-historical and historical resources in Niagara District.	
Heritage Appreciation	To provide opportunities for exploration and appreciation of the outdoor natural and cultural heritage of Niagara District.	

A: forestry

1. OBJECTIVE

The objective for forestry in southern Ontario is to provide for an optimum contribution to the economy of forest-based industries consistent with sound environmental practices, and to provide for other uses of the forest.

2. TARGETS

The forestry targets in Niagara District are:

- to produce an annual continuous supply of 28,300 cubic metres (1 million cubic feet) of wood for industrial purposes by the year 2020 while maintaining the present diversity of forest products; and
- to make the maximum contribution from forest production to the achievement of the provincial energy target.

3. RESOURCE ANALYSIS

The productive capability of the soils and climate in Niagara District is conducive to the occurrence and superior growth of high value hardwood species such as oak, maple, ash and black walnut.

The 1982 sawmill returns indicate that approximately 50,000 cubic metres (1.8 million cubic feet) of wood were processed within the district. However, it is known that a substantial portion of this wood originates from outside the district. The Ontario Paper Company Limited in Thorold processes approximately 650,000 cubic metres (23 million cubic feet) of wood annually. Approximately 80 percent of this wood is harvested from Crown land in northern Ontario, while the remaining 20 percent is purchased from private lands in Ontario and the United States. Annual firewood production of approximately 42,000 cubic metres (1.5 million cubic feet), is not included in the sawmill returns.

The total area of land potentially available to contribute to the district's forest production target is 24,400 hectares (60,000 acres). Approximately 17,400 hectares (43,000 acres) of the land are forested. An additional 7,000 hectares (17,000 acres) of open land are suitable for reforestation.

If the average annual growth rate in an unmanaged woodlot is 3.5 cubic metres per hectare (50 cubic feet per acre), then the existing woodlots in the district could potentially produce a gross total volume of 60,900 cubic metres (2.2 million cubic feet). However, only a portion of this wood would be merchantable and capable of contributing to the forest production target. Nonetheless, it would theoretically be possible to achieve the target from wood production on existing woodlots.

The quality and quantity of wood which can *actually* be produced from existing woodlots is influenced by the following factors:

- 99% of the district land base is privately owned. The interest of landowners in harvesting wood and participating in ministry programs will directly influence the quality and quantity of wood produced.
- Future urban development, severances and other competing land uses may severely restrict forest activities in some areas.
- Other forest uses, including outdoor recreation and wildlife management, may limit the utilization of the full production potential of these areas.
- Current harvesting practices and the present condition of existing woodlots dictate the need of a larger land base to produce quality wood required by forest based industries.

The dependence on private lands for wood production makes it difficult to estimate the actual amount of land required to produce the high quality hardwoods needed to meet the forestry target. Given the uncertainty of land availability, an increase in woodlot productivity is necessary to assist in achieving the forest production target. By improving the forest management practices in existing forest stands and planting land suitable for reforestation, the district's forest production could increase threefold.

Woodlot and plantation thinnings suitable for fuelwood purposes contribute to the energy

Map 2

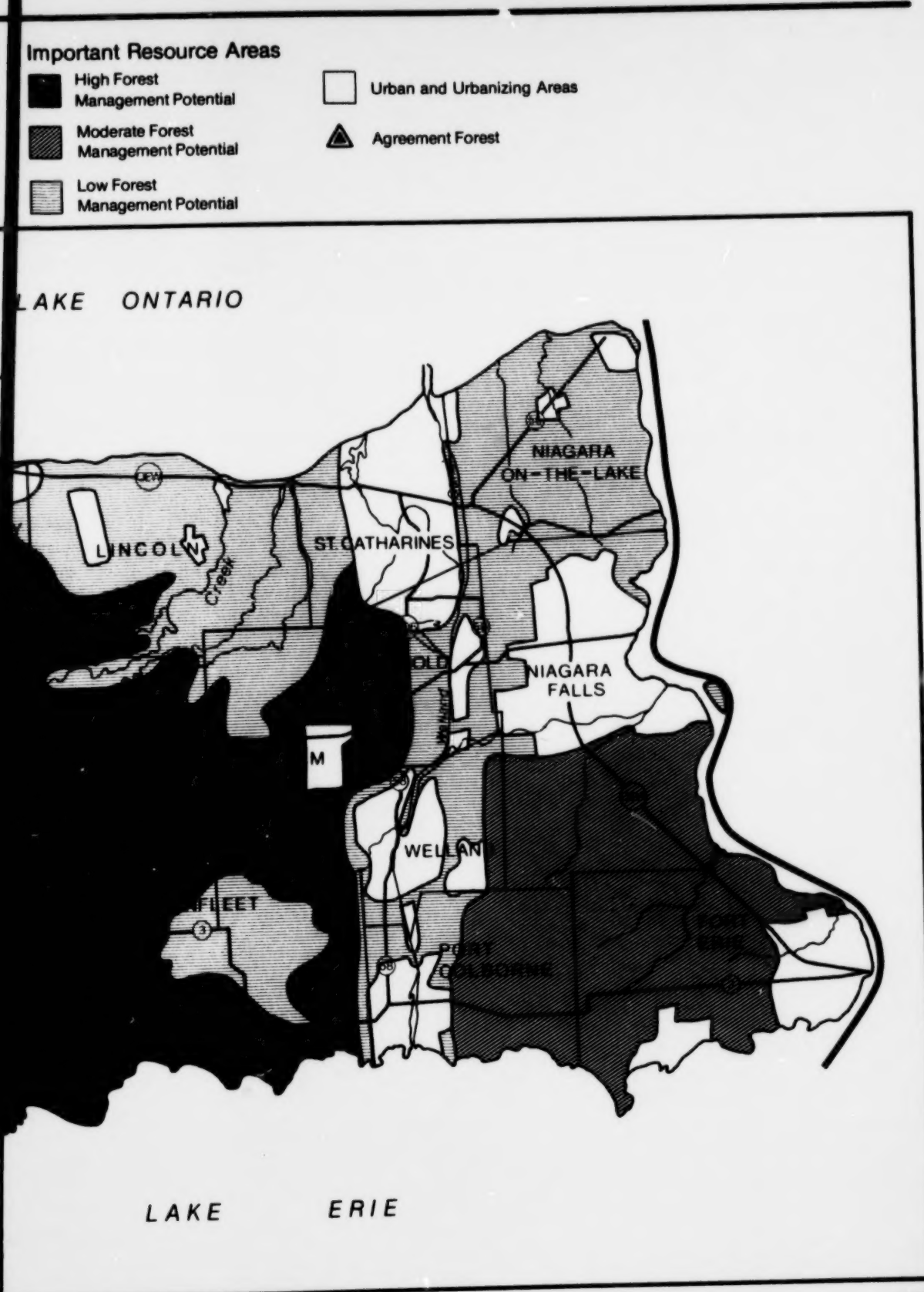
NIAGARA DISTRICT

FORESTRY

LEGEND

- Local Municipal Boundary
- Regional Municipal Boundary
- MNR District Boundary

The information shown has been generalized due to scale limitations.
Detailed current information can be obtained from the District Office.


Important Resource Areas
High Forest Management Potential
Moderate Forest Management Potential
Low Forest Management Potential
Urban and Urbanizing Areas
Agreement Forest
LAKE ONTARIO
NIAGARA ON-THE-LAKE
LINCOLN
ST. CATHARINES
NIAGARA FALLS
WELLAND
PORT COLBORNE
LAKE ERIE

1983

self-sufficiency target for Ontario. These thinnings are also in demand by the local shaving mills and sawmills.

Maintenance of existing forest cover and reforestation provide benefits in addition to wood production. These other benefits include retention or improvement of wildlife habitat and fish habitat, and protection of natural areas and aesthetics.

4. PROGRAM STRATEGY

a. Contribution to General Policies

Public Safety

- prepare and implement a fire management plan;
- develop cooperative fire prevention and control agreements with municipalities; and
- ensure that development and harvesting activities in forested areas are designed to reduce the possibility of fire spread.

Environment

- manage forests so that the habitat of provincially rare and endangered animals and plants will be protected;
- prepare and implement class and individual environmental assessments to meet the requirements of the *Environmental Assessment Act;* and
- ensure that marking for selective cutting is sensitive to the ecological functions of wooded areas.

Energy

- encourage the harvest of fuelwood; and
- participate in studies on the feasibility of establishing hybrid poplar plantations for energy production.

The forestry program's contribution to the integrated resource management policy is outlined in section c, Resource Management Integration Guidelines.

b. Important Resource Areas and Area Strategies

Due to the lack of a significant Crown land base, the district must look to private lands to meet the forest production target. The private land woodlots are generally quite small and are scattered throughout the district.

Resource areas have been identified (Map 2) based on the capability of the land to grow trees and consideration of other potential land uses. The purpose of identifying areas is to ensure the best and most efficient use of available manpower and financial resources. Within the resource areas, it is anticipated that those lands managed under *Woodlands Improvement Act* (WIA) agreements and *Advisory Services Agreements* (ASA) will contribute the major portion of the forestry target.

The high forest management potential area is located south of the Niagara Escarpment and west of Highway 406 (Map 2). Also, all rural upland hardwood forests are considered to be high forest management potential areas. These areas are key to the forestry program because of the predominantly rural land uses and the generally productive soils.

The forested upland hardwood sites are particularly important because of the superior growth potential and their capability to produce high quality products. Forest management practices will be employed to improve the growth and quality of the existing woodlots and expand and consolidate forested areas. Large forest tracts can improve forest management efficiency and provide better wildlife habitat.

The moderate forest management potential areas include the area east of Highway 406 and a portion of the western part of the district. Urban development pressures and poorly drained soils east of Highway 406 may limit the area's contribution to the forest production target. In the western section of the district, the class 1 soils are mainly used for agriculture.

Forest management practices in the moderate potential areas will be primarily directed to the management of the existing forested areas. Reforestation will be promoted to expand and consolidate wooded areas on rural lands and on lower class soils and to assist in the achievement of other program objectives.

The low forest management potential areas are those lands with tender fruit soils and peat soils. The potential contribution of these areas to the forest production target is limited because the primary use of tender fruit soils is for specialty crop production. Also, peat soils have low capability for forest production. Advisory services will be provided to encourage multiple-use of these areas through selective cutting and planting where appropriate.

While urban and urbanizing areas have forest management potential, wood production potential is severely limited by residential, commercial, industrial and other urban land uses. The district will provide advice to landowners upon request.

Conservation authorities can contribute to the district's forestry targets through their private land assistance programs involving tree planting and through the management of woodlots located

in conservation areas. A 75 hectare (186 acre) tract is being managed by this ministry under an agreement with the Niagara Peninsula Conservation Authority. Management is focused on the production of high quality wood and wood products, the provision of proper environmental conditions of wildlife, the protection and production of water supply and other uses of the forest.

Good communications and cooperation between district staff, other agencies and the private landowner are essential to realizing the forest production target.

c. Resource Management Integration Guidelines

(i) Forestry staff will provide technical advice and assistance to the other programs in the management of forestry aspects of their projects and properties.

(ii) Those forest management projects that protect or enhance cold water streams and their headwaters should be given special consideration during project selection.

(iii) Forest management will take place in provincial parks only for demonstration purposes, park development or as part of approved park management activities according to master plans and to provincial parks planning and management policies.

(iv) Forest management may occur in candidate parks, with judicious controls, if it will have no significant negative impact on the long term achievement of parks objectives and if it is conducted within the framework of approved management guidelines.

(v) Forest management in significant areas of natural and scientific interest will require prior consultation with parks staff.

(vi) Forest management practices will be coordinated with the fish and wildlife program and whenever possible will incorporate management techniques that will improve wildlife habitat, particularly in significant wildlife biological areas and wildlife management areas. WIA landowners will be made aware of the option of incorporating wildlife management objectives into their agreements.

(vii) Forest management should be conducted on high potential mineral aggregate areas only after consultation with mineral resources staff. Consideration will be given to the resource potentials for both forestry and mineral aggregate, the probability of extraction occurring and the possibilities for sequential use.

(viii) District supervisors will continue to be consulted during both the preparation and review of agreement forest and Crown land forest management plans. Consideration will be given to mineral aggregate, fish, wildlife, recreation and environmental concerns in these plans.

(ix) Forest management staff will notify staff in other programs of pending WIA agreements for lands where another program interest has been mapped, or where the landowner has special interests related to their program.

(x) Forest management proposals in areas with official plan, zoning or development concerns will be reviewed with district lands staff.

(xi) On hazard lands, forest management prescriptions will incorporate site protection objectives (erosion control, bank stabilization, etc.). Flood prone lands may be managed for wood production purposes.

d. External Co-ordination Guidelines

(i) The ministry's forest management activities will normally be restricted on lands designated for urban expansion, rural residential development, and other uses which would significantly reduce the forest production potential. Involvement in these areas will usually be limited to advisory services.

(ii) Any municipal planning policies which may affect forest management on private land, especially in areas designated environmentally sensitive, will be carefully reviewed before forestry activities are carried out.

(iii) While the Niagara Escarpment plan is being finalized, the ministry will not undertake any forest management actions that would compromise the intent of the proposed plan. Once the plan is approved, the ministry will ensure that all forest management programs are carried out in conformity with the plan.

(iv) Agreement forests will be managed with the continued involvement of the owners (municipalities and conservation authorities).

(v) Reforestation will not occur on prime agricultural land without prior consultation with the Ministry of Agriculture and Food. Existing woodlots in agricultural areas will be managed wherever possible.

(vi) The ministry will cooperate with conservation authorities in the provision of private land forestry services.

(vii) Forest management plans will be available for public review.

e. Plan Input and Review Guidelines

(i) The ministry will encourage official plan policies which recognize the value of high forest management potential areas and encourage the

protection of these areas for future management.

(ii) The ministry will encourage the adoption of zoning by-laws which recognize forest management as a permitted use in all appropriate areas of the municipality.

(iii) The ministry will encourage the implementation of tree-cutting by-laws.

(iv) The ministry will:

- provide information on existing and potential forest resources;
- encourage the protection of existing high quality woodlots from incompatible development;
- encourage the use of forests for commercial, recreational, aesthetic and conservation values;
- encourage private landowners to participate in forestry advisory services and assistance programs; and
- encourage private developers to retain as much existing forest cover as possible.

B: mineral aggregate

1. OBJECTIVE

The objective for mineral aggregate production in southern Ontario is to meet anticipated future demands with minimal disturbance to natural and cultural resources and the social environment.

2. TARGET

The target for mineral aggregate production in Niagara District is to ensure a total cumulative supply of 143 million tonnes (159 million tons) for the period 1982 to 2000.

3. RESOURCE ANALYSIS

In 1980, approximately 6.2 million tonnes (6.8 million tons) of aggregate were extracted from 32 licenced pits and quarries in the Niagara District. The aggregate resources in these licenced properties are estimated to be 419 million tonnes (460 million tons). The total high potential aggregate resource in the district is estimated to be 6470 million tonnes (7077 million tons) (Table 3). Of the high potential resources, only 70 million tonnes (77 million tons) are sand and gravel, while the remainder are bedrock.

Although the resource estimates appear to suggest that it will be easy to meet the targets, there are at least three reasons why this may not be the case.

Firstly, the ministry cannot guarantee the continued use or level of production of aggregate from existing licenced pits and quarries nor the availability of the high potential mineral aggregate areas identified on Map 3. Secondly, many deposits are not available for extraction for a variety of reasons. Thirdly, the demand may be for specific products, rather than just aggregate in general. A particular problem in Niagara District is the very limited supply of sand and gravel.

Even if the target could be met from existing licenced properties, it must be recognized that mineral aggregate is a non-renewable resource and demand will not cease in the year 2000. As a result, the ministry is seeking to identify and maintain the potential of sufficient aggregate to meet the target and keep future options open. The ministry is not requesting the designation of large areas as aggregate extraction—rather it is seeking designations such as agriculture and rural which provide for ongoing uses without preventing the possibility of extraction, should that become necessary.

The value of aggregate is closely related to the proximity of the deposit to the market. This is due to the high bulk and low unit value of aggregate. Over half of the delivered cost of aggregate is accounted for by transportation. An increase in travel distance results in higher costs of aggregate, greater demands for road maintenance, increased road traffic and associated environmental impact and energy wastage.

The aggregate resources in Niagara District have

TABLE 3 MINERAL AGGREGATE SUMMARY[1]

Commodity	Target Million Tonnes (Tons) year 2000	Estimated Resources in Licenced Pits and Quarries Million Tonnes (Tons) year 1981	Estimated High Potential Total Resources[2],[3] Million Tonnes (Tons)
Sand and Gravel	21 (23)[4]	9 (10)	70 (77)[5]
Bedrock	122 (136)	410 (450)	6400 (7000)
Total	143 (159)	419 (460)	6470 (7077)

(1) Minor variations in above table are due to rounding of data.
(2) 'Resources' indicates the estimated volumes of aggregate based upon reconnaissance surveys of the presence of suitable commodities for which extraction is believed to be currently feasible.
(3) Total aggregate resources in Niagara District are estimated to be 30,000 million tonnes (33,000 million tons). From these, high potential mineral aggregate areas have been identified. Resource tonnages shown are those estimated available in high potential mineral aggregate areas after deleting the resource unavailable, because of constraints such as roads, utility corridors, most tenderfruit soils, residential development, urban area boundaries, provincial parks and conservation areas.
(4) Individual commodity targets were derived by dividing total district targets by historic market share of that commodity.
(5) More than 50% of high potential sand resources are not suited for high specification road construction aggregates.

been inventoried and evaluated through this ministry's Aggregate Resources Inventory Program (ARIP). Detailed maps and geological information on each municipality are available at the district office.

The high potential aggregate resource areas were identified on the basis of geological, economic and planning criteria. These general criteria include the geological quality and extent of a given deposit, its proximity to markets and other sources and the general market demand for the commodity. Once specific deposits were identified, possible constraints were assessed. These include obvious physical constraints such as existing and proposed urban areas; transportation and utility corridors; other important land uses such as the tender fruit industry; other ministry resource interests, such as existing and candidate provincial parks; and conservation authority lands. Map 3 reflects the preliminary results of these analyses. The high potential mineral aggregate areas will be further refined following discussions with municipalities, the Ministry of Agriculture and Food and other appropriate agencies. The map may also be modified and updated as new aggregate resource areas are identified in light of additional geological information.

Good communication and the integration of resource concerns are necessary to ensure that extraction activities may be undertaken in the high potential aggregate areas to meet long term aggregate industry demands.

In most cases, rehabilitation can achieve the desired ends. Subject to certain constraints, such as height of the water table, a pit or quarry can be rehabilitated to almost any desired after use such as agriculture, recreation, forestry, residential, commercial or industrial.

In summary, the high potential areas on Map 3 are in excess of anticipated requirements to the year 2000. However, shortages of good quality sand and gravel are likely before the end of the target period unless high potential sand and gravel areas outside of licenced areas are protected.

4. PROGRAM STRATEGY

a. Contribution to General Policies

Public Safety

- work towards the elimination of abandoned pit hazards by preparing and maintaining a list of abandoned sites; and
- in cooperation with the Ministry of Labour, make field inspections and determine appropriate action to secure and eliminate hazards associated with abandoned pits and quarries.

Environment

- endeavour to achieve program objectives with minimal long term disturbance to the environment; and
- require mitigating measures and rehabilitation where environmental impacts from extraction operations are inevitable.

The contribution to the integrated resource management policy is outlined in section c, Resource Management Integration Guidelines.

b. Important Resource Areas and Area Strategies

Sand and gravel deposits in Niagara District are very limited in extent. The high potential resources shown on Map 3 represent those areas

that are key to maintaining a continued supply of sand and gravel in the district. Major areas include: Fonthill Kame delta, St. Davids ice-contact delta, Glaciolacustrine beach and bar deposits, Dunnville sand dunes, Niagara bar, and buried sand and gravel deposits.

Additional resources of sand and minor amounts of gravel are available on the bed of Lake Ontario, near the mouth of the Niagara River. Although the extent, volume and quality of these deposits are not well known, one company, licenced under the *Beach Protection Act*, is currently dredging significant amounts of sand at the mouth of the Niagara River.

Fairly extensive bedrock deposits are located in the district. High potential bedrock resources are those areas overlain by less than eight metres of drift, and with minimal planning constraints, which could supply construction aggregates. The important resource areas are: the Lockport-Amabel Formation, Bertie Formation, Bois Blanc Formation, and the Queenston Formation.

The major sandstone deposits in the district are the Whirlpool and Oriskany Formations. The potential of these formations is severely reduced by land competition and small outcrop areas. No significant amounts of sandstone have been marketed within the last 50 years.

The prime shale resource of the district is located in the Queenston Formation between the Niagara Escarpment and Lake Ontario. The only active shale pit is operated in Niagara-on-the-Lake in association with a brick plant.

It should be noted that quarry operations can be sited on a wider range of possible resource areas than sand and gravel pits. This is due to the following factors:

- variations in the quality and quantity of bedrock deposits are gradual;
- a quarry operation can use a smaller area and a greater depth than a sand and gravel pit and produce equivalent amounts of material; and
- the higher unit value of bedrock compared to sand and gravel allows for longer haul distances.

Additional quarry sites, away from areas of intensive land use competition, can be selected if large volume markets are available.

The limited amount of sand and gravel resources in Niagara District, plus the nature of pit operations, does not allow the same degree of flexibility in site selection. The potential of the important sand and gravel deposits should be maintained whenever possible.

The guidelines noted below will be employed by district staff to assist in integrating aggregate extraction with other ministry resource interests and with other land users.

c. Resource Management Integration Guidelines

(i) Proposals for extraction activities, including applications, site plans and rehabilitation plans, will be circulated to staff of all programs. Significant changes to these documents which would alter the character of operations will also be circulated to all programs.

(ii) In approving site plans, a buffer will normally be required between the extraction limit and any stream or lake. The buffer should provide protection to habitat, if necessary, as well as siltation control. The fish and wildlife program will be consulted regarding the location and types of buffers.

(iii) There will be no aggregate extraction in provincial parks and wildlife management areas except for the approved on-site utilization of materials.

(iv) Pit or quarry applications in floodplains will receive detailed scrutiny to ensure that they will not significantly increase flooding hazards.

(v) Mineral resources staff will develop detailed guidelines in conjunction with other ministry staff and, where appropriate, other agencies regarding extraction proposals potentially affecting streams, lakes, floodplains, wildlife habitat, and highly productive woodlots.

(vi) Extraction proposals will generally be discouraged on significant areas of natural and scientific interest. Extraction proposals on such areas will be reviewed with parks staff.

(vii) The ministry will encourage pit operators to rehabilitate their sites into a condition compatible with surrounding land uses. Where appropriate, mineral resources staff will encourage rehabilitation involving natural resource management and will refer the operator to the appropriate ministry program for advice.

(viii) Mineral resources staff will assist the parks program in the identification of earth science features of educational and scientific significance.

(ix) When reviewing applications for wayside pits, mineral resources staff will consult program strategy maps for possible conflicts with other program interests.

(x) Mineral resources staff will assist other district staff in the development of guidelines for tree planting and wildlife enhancement in specific sites identified as high potential mineral aggregate resource areas.

d. External Co-ordination Guidelines

(i) In processing pit and quarry applications, mineral resources staff will ensure that a site has proper official plan and zoning status before issuing a licence.

(ii) While the Niagara Escarpment plan is being finalized, the ministry will not undertake any actions that would compromise the intent of the proposed plan. Once the plan is approved, the ministry will ensure that extraction proposals are in conformity with the plan.

(iii) The district will work with other agencies to ensure that aggregate resources which would be made unavailable by planned development (e.g., a subdivision) will be utilized wherever possible.

(iv) The district will provide municipalities, other government agencies and the public with basic resource data. Municipalities will be assisted in the identification of areas required to meet local and provincial aggregate requirements.

(v) Mineral resources staff will circulate pit and quarry applications to local and regional municipalities and, as appropriate, to conservation authorities, Ministry of the Environment, Ministry of Agriculture and Food, Ministry of Municipal Affairs and Housing, Ministry of Labour and the Niagara Escarpment Commission. All applications proposed in agricultural or specialty crops areas identified on Map 7 will be circulated to the Ministry of Agriculture and Food.

(vi) When the ministry is contacted by the Ministry of Transportation and Communications during the preparation of aggregate source lists, all programs will be consulted as appropriate, to ensure that their concerns are considered.

(vii) The Ministry of Natural Resources will encourage the concept of extraction as an interim land use activity. Toward this end the ministry will:

- encourage operators of extractive sites to make the most effective use of the land resource;
- encourage sequential land use and progressive and ultimate rehabilitation with the active extraction area limited to a minimum practical size;
- encourage operation of the site in a manner as compatible as possible with surrounding land uses and activities; and
- encourage all depleted extractive sites, including wayside pits and quarries, to be returned to a condition suitable for an acceptable after use and compatible with adjacent land uses.

e. Plan Input and Review Guidelines

(i) Official plans should:

- include policies that recognize existing licenced pits and quarries and protect them from incompatible land uses;
- identify and protect from land uses which are incompatible with possible future extraction as much of the mineral aggregate resources occurring in the municipality as is realistically possible in the context of the municipality's other necessary land use planning objectives, and in recognition of the continuing local, regional and provincial need for mineral aggregates;
- provide a clear and reasonable mechanism to permit the establishment or expansion of pits and quarries;
- permit wayside pits and quarries without requiring an amendment to the plan or zoning by-law, except the plan may require a rezoning for a wayside pit or quarry in areas of existing development or particular environmental sensitivity which are designated in the plan; and
- include policies to encourage rehabilitation to an after use compatible with the long term uses permitted by the plan.

(ii) Zoning by-laws should include the following:

- definitions for the terms pit, quarry, wayside pit and wayside quarry;
- a distinctive extractive zoning category such that pits or quarries are permitted activities with no uses or other activities permitted that would be incompatible with mineral aggregate operations;
- provisions that permitted uses in the extractive zone include accessory uses such as stockpiling, sorting and washing operations; compatible uses such as agriculture and forestry; and ancillary uses such as asphalt plants (which can be limited to specific properties by the local municipality); and
- a clause that permits wayside pits and quarries in all zoning categories, except in zones which are established to recognize existing development or areas of particular environmental sensitivity, where wayside pits and quarries may be prohibited.

(iii) The ministry will provide comments to planning review and approval agencies on proposed planning actions that may have implications for mineral aggregate resource development. Comments will relate to the compliance of these actions with mineral aggregate resource policy and to wise mineral aggregate resource management.

(iv) The ministry will provide information on the location of abandoned pits and quarries to promote public safety.

Map 3

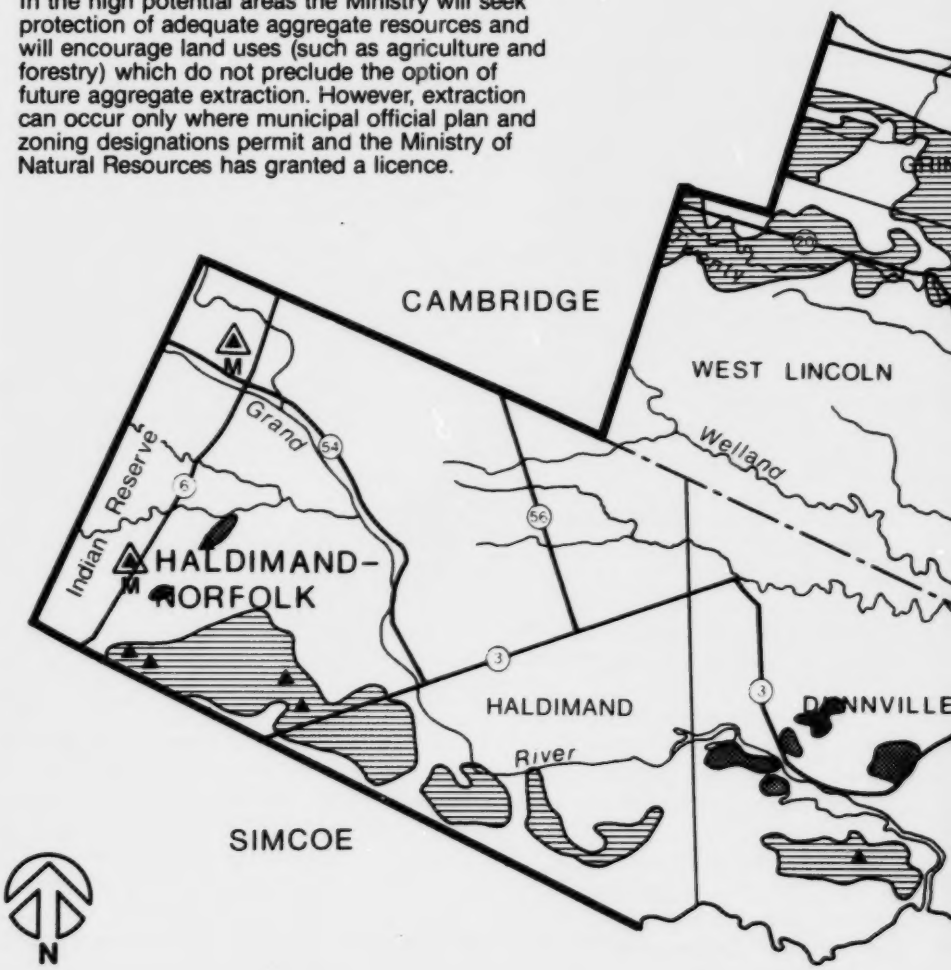
NIAGARA DISTRICT
MINERALS AND MINERAL AGGREGATE

LEGEND

- Local Municipal Boundary
- Regional Municipal Bound
- MNR District Boundary

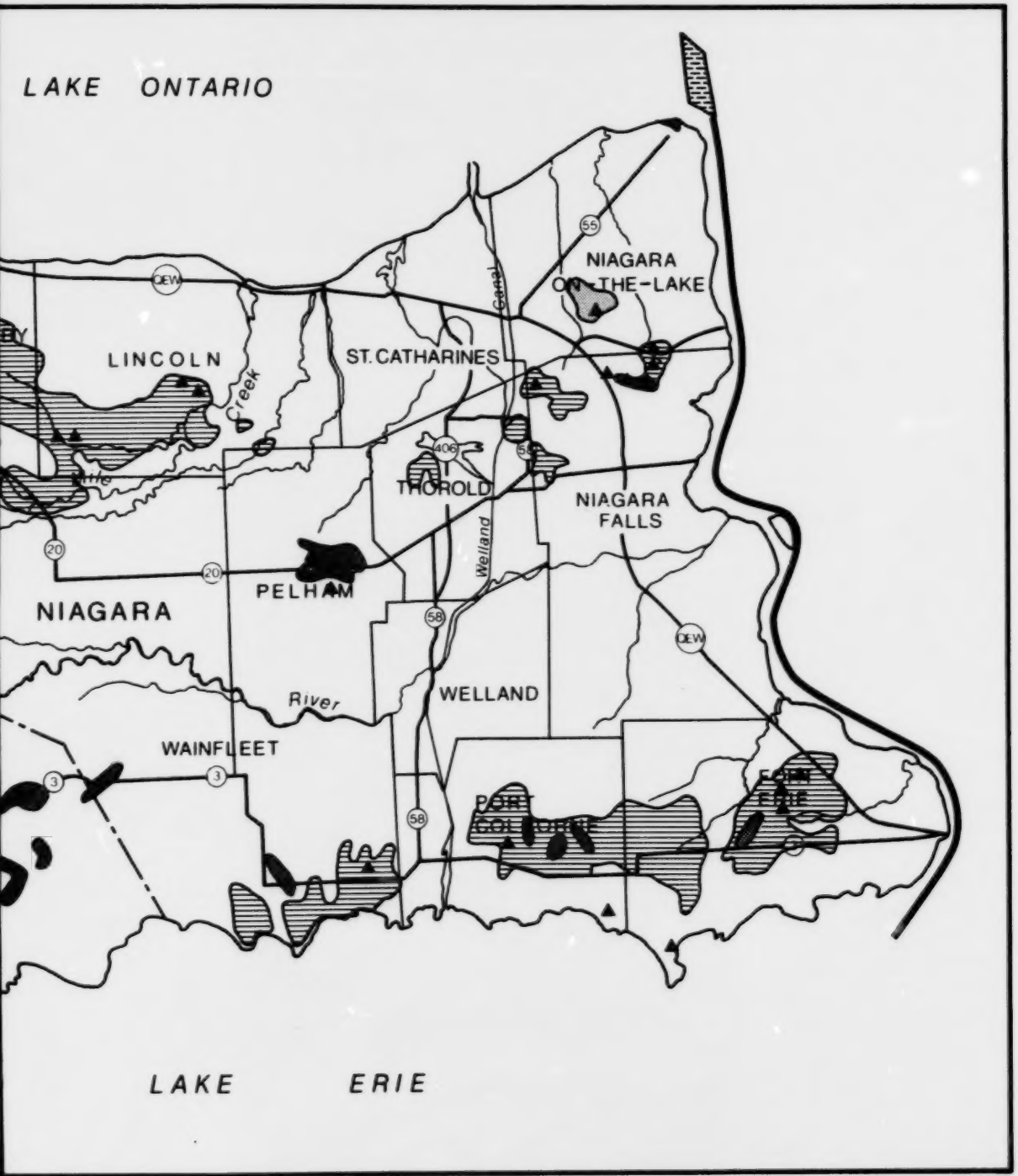
The information shown has been generalized due to scale limitations. Detailed current information can be obtained from the District Office.

This map shows high potential mineral aggregate resources and currently licenced pits and quarries. In the high potential areas the Ministry will seek protection of adequate aggregate resources and will encourage land uses (such as agriculture and forestry) which do not preclude the option of future aggregate extraction. However, extraction can occur only where municipal official plan and zoning designations permit and the Ministry of Natural Resources has granted a licence.



Important Resource Areas

- High Potential Sand and Gravel
- High Potential Bedrock —Shale
- High Potential Bedrock —Limestone
- Licenced Pits and Quarries
- Gypsum Mine
- Area Licenced for Sand Dredging



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c: minerals and fossil fuels

1. OBJECTIVE

The objective for minerals and fossil fuels in southern Ontario is to provide for a strengthening of the contribution of these resources to provincial economic development and energy production.

2. TARGET

The target for oil and gas is to encourage as much exploration and production as possible in order to maximize the contribution to provincial energy needs.

Specific mineral and fossil fuel production targets cannot be established because of the difficulties in predicting market trends and assessing resource potential and because actual production is a responsibility of the private sector.

3. RESOURCE ANALYSIS

Most of the gypsum produced in Ontario comes from the former townships of Seneca, Oneida and North Cayuga, now known as the Town of Haldimand. Two mines are currently actively operating in Niagara District: Hagersville and Caledonia.

Wainfleet Bog contains a significant peat resource which is currently being mined by two peat companies. These two operations cover approximately 1,100 hectares (2,800 acres) of land. Most of the peat is sold for horticultural purposes on the export market.

Potential oil resources in the district are estimated to be 300 million barrels. However, no oil is presently being extracted. Approximately 142 billion cubic metres (5000 billion cubic feet) of potential gas resources are located in the district. Many active and abandoned gas wells are scattered in a wide area south of the Welland River and on the bed of Lake Erie.

4. PROGRAM STRATEGY

a. Contribution to General Policies

Public Safety

- in cooperation with the Ministry of Labour make field inspections and determine appropriate action to secure and eliminate hazards associated with abandoned open pit mine shafts; and
- keep up-to-date maps showing the location of abandoned oil and gas wells. These maps will be consulted when development proposals are reviewed.

Environment

- abide by the existing International Agreement on oil and gas extraction on the Great Lakes; and
- ensure that any future production in the Great Lakes will require consideration of the impacts on the environment.

Energy

- assist in the identification of areas suitable for oil, gas or peat production.

The contribution to the integrated resource management policy is outlined in section c, Resource Management Integration Guidelines.

b. Important Resource Areas and Area Strategies

High potential areas for minerals and fossil fuels have not been determined.

c. Resource Management Integration Guidelines

(i) Crown lands open to staking will continue to be available for mineral exploration, except where the needs of ministry programs justify the withdrawal of the area from staking.

(ii) Mineral resources staff will assist the parks program in the identification of earth science features of educational and scientific interest.

d. Plan Input and Review Guidelines

(i) The ministry will provide information on the location of gas and oil wells to promote public safety.

(ii) The ministry will encourage municipalities to permit exploration and extraction of minerals and fossil fuels.

D: fisheries

1. OBJECTIVES

The objective for fisheries management in southern Ontario is to provide opportunities for recreation and economic benefits consistent with the maintenance of healthy fish communities.

More specific objectives are:

Sport Fishing

- to meet sport fishing demands within the limits of a wisely managed and rehabilitated resource;

Commercial Fishing

- to maintain a viable commercial fishing industry;

Bait Fishing

- to maintain current production; and

Provincially Rare and Endangered Species

- to prevent the extinction of any native species.

2. TARGETS

The fisheries targets for Niagara District are:

Sport Fishing

- to provide 326,000 recreation opportunities annually by the year 2000;

Commercial Fishing

- to provide 269,000 kilograms (591,800 pounds) annually by the year 2000;

Bait Fishing

- to provide 4.4 million dozen annually from natural sources; and

Provincially Rare and Endangered Species

- to ensure that no native fish species become extinct.

3. RESOURCE ANALYSIS

Niagara District provides commercial and sport fishing on Lake Erie, sport and bait fishing on the Niagara River and seasonal salmonid sport fishing on Lake Ontario. Inland streams and small reservoirs such as Lake Gibson, Moodie Lake and Martindale Pond sustain modest sport fisheries. Twelve Mile Creek is the only cold water stream in the district.

The potential sustainable annual fisheries yield from waters in the district is estimated to be 602,000 kilograms (1,325,000 pounds). Because of the large harvest of bait fish in Niagara District, bait fish have been included as a component of the total sustainable yield.

The actual amount of the sustainable yield which may be available to assist in target achievement is influenced by the following factors:

- availability of fish species sought by sports/commercial fishermen;
- amount of contaminants in fish harvested;
- location of fish in relation to angling pressures; and
- access to fisheries resource areas.

The allocation of the allowable harvest of the fisheries resource among user groups will be based on an objective, careful examination of all relevant biological, social and economic factors to ensure that the optimum benefits accrue to the residents of Ontario. It is the responsibility of both anglers and commercial fishermen to participate in cooperative management and adhere to their catch limits, quotas and the regulations to protect the fish stocks and guarantee their perpetuation for the future. In this way, the allowable harvest will not exceed the sustainable fisheries yield.

Sport fish harvest data for this district is incomplete. Estimates of current sport fish yields are based on intensive creel census data, extrapolation of this data and information from local personnel involved in the fishing industry. This

data is felt to be the most accurate measure currently available. It is estimated that at the minimum, 151,000 sport fishing angler days occur in the district per year. The current annual harvest is at least 86,000 kilograms (190,000 pounds).

Based on the current catch per occasion rate, it should be possible to provide 326,000 sport fish opportunities per year (186,000 kilograms—409,000 pounds) by the year 2000 and still remain within the allowable harvest limit. However, the influences of the contaminants mentioned earlier, on target achievement are not known. The elimination of spawning and nursery grounds and other changes in the fishery resource could also reduce the potential fish harvest. Controlling these negative impacts is especially important in the Twelve Mile Creek watershed, the only cold water fishery in the district, if variety of fishing opportunities is to be provided.

The five year (1976-1980) annual harvest of commercial fish in the district is approximately 250,000 kilograms (550,000 pounds). The majority of this harvest is taken from Lake Erie with minor contributions from Lake Ontario and the Grand River. A key factor in achieving the commercial fishing target of 269,000 kilograms per year by the year 2000 will be the outcome of rehabilitation plans for the Great Lakes fisheries. Based on current harvest levels and long term commercial fish harvest information, it should be possible to meet the target.

The emerald shiner is the main contributer to the Niagara bait fish industry. Approximately 70 per cent of the annual harvest is from Niagara River. The balance is from Lake Erie and inland waters such as the Grand and Welland Rivers. Between 1976 and 1980 the average annual harvest was 4.42 million dozen or 147,700 kilograms. It is not yet possible to predict the potential yield of commercial bait fish. Efforts will be made to maintain the current harvest levels.

4. PROGRAM STRATEGY

a. Contribution to General Policies

Public Safety

- assist in the monitoring of contaminant levels in fish.

Environment

- manage aquatic communities rather than single species;
- identify and protect the habitat of rare and endangered fish species; and
- prepare and implement class and individual environmental assessments where required.

The contribution to the integrated resource management policy is outlined in section c, Resource Management Integration Guidelines.

b. Important Resource Areas and Area Strategies

The areas important to achieving the fisheries targets are indicated on Map 4. The wetlands shown on Map 5 are also important since these areas provide fish spawning and nursery grounds.

The most important fishery in the district is Lake Erie. Bays along the Lake Erie shoreline support a sport fishery for smallmouth bass. Yellow perch are fished seasonally through the ice and by boat in the spring. The agricultural drains along Lake Erie support a small northern pike spear fishery. The yellow perch and walleye (yellow pickerel) found in Lake Erie are key to the district's commercial fishing industry.

Lake Ontario plays a smaller but still significant role as a sport fishery compared to Lake Erie. There is an important spring run of rainbow trout, chinook and coho salmon along this shoreline.

Shoreline municipalities will be encouraged to increase access to the Great Lakes so that the fishing opportunities can be utilized. Boat ramps, parking and marina facilities need to be supplied. Fisheries assessment work will be continued by fisheries staff to improve the district data base. Sampling for contaminant analysis and fish stocking will be undertaken as required.

To further protect the fisheries resources of both Lake Erie and Lake Ontario, the ministry is working with American jurisdictions to ensure that balanced harvests of fish stocks are assured and management strategies are compatible.

The Niagara River is an important fishery for the sport fish and the bait fish industries. Anglers seek a variety of fish with an extensive fall fishery for rainbow trout, chinook and coho salmon and smallmouth bass. Bait fish are primarily harvested in spring and fall at the mouths of the Usshers, Boyers, Black, Bakers, Millers and Frenchmans Creeks entering the upper Niagara River and near the Peace Bridge in Fort Erie.

Management of the Niagara River fisheries will continue to focus on resource evaluation and enforcement of angling regulations. Annual checks on the bait fish species composition should be made to monitor the abundance of the emerald shiner population. Fish will be checked for contaminants as required.

The Grand River is Niagara District's most important inland warm water fishery. Total angling effort expended on the Grand River may be of the same order of magnitude as that on the Niagara River. Current management, which includes studies of the potential to rehabilitate the river for increased walleye production, will be continued.

Other inland angling is relatively light. Most of the inland streams and ponds are warm water fisheries. Jordan Harbour, Lake Gibson, Moodie Lake, Martindale Pond, Old Welland Canal, Eagle Marsh Drain and the Welland River are frequented by anglers. Fishing in other inland warm water areas is limited by low summer flows and degraded water quality.

Colder water flows, in spring and fall, in the Grand River, Twenty Mile Creek and other small streams along Lake Ontario, attract migrations of trout and salmon. Twelve Mile Creek is the district's only known cold water stream supporting a native population of brook trout. Deforestation, agricultural practices, urbanization and water diversions have reduced the fish production potential of this creek.

Means of rehabilitating key inland fisheries, such as Twelve Mile Creek, will be considered through special studies. Information and education programs will play an important role in increasing public knowledge about what fish are present, how fish habitat can be maintained or improved, and ensuring access to fish resources.

Conservation authorities also provide fishing opportunities. A put-and-take rainbow trout program is operated at St. Johns Conservation Area owned by the Niagara Peninsula Conservation Authority. The Taquanyah Conservation Area owned by the Grand River Conservation Authority provides a pike and panfish fishery. District staff will assist in these programs as required.

The implementation of the fisheries strategies will require the co-ordination and cooperation of land and water users both within this ministry and among other agencies and individuals. The guidelines listed below will be followed.

c. Resource Management Integration Guidelines

(i) In administering approvals under the *Lakes and Rivers Improvement Act, Fisheries Act, Navigable Waters Protection Act* and similar legislation, the ministry will seek to protect critical fisheries habitat areas such as spawning and nursery areas in marshes, shoals and cold water streams.

(ii) All fisheries management plans will be circulated to the other district supervisors for review and comment.

(iii) Fisheries management in provincial parks will conform to master plans and provincial parks planning and management policies. Fisheries management in candidate parks will occur within the framework of approved management guidelines.

(iv) Fisheries management proposals for significant areas of natural and scientific interest will be reviewed with parks staff.

(v) Fisheries staff will identify areas where tree planting should be carried out to protect or enhance stream habitat.

(vi) Wherever practical, fisheries management plans and other fisheries projects will incorporate other resource management benefits.

d. External Co-ordination Guidelines

(i) Official plans and zoning by-laws will be reviewed by the ministry before decisions are made on fisheries habitat management.

(ii) While the Niagara Escarpment plan is being finalized, the ministry will not undertake any actions that would compromise the intent of the proposed plan. Once the plan is approved, the ministry will ensure that all fisheries management programs are carried out in conformity with the plan.

(iii) Municipalities will be encouraged to provide fishing access points along the Great Lakes shoreline and within urban areas along streams.

(iv) The ministry will work with conservation authorities and other public agencies to encourage and assist in fisheries management on their properties. The ministry will also seek to carry out fisheries management programs on private lands in cooperation with landowners, conservation authorities and private groups.

(v) Conservation authorities will be encouraged to work closely with the district office in the development of all water management plans. Authority/district liaison at the beginning of project/program planning will help streamline regional ministry approval of projects and avoid potential conflicts with district programs.

(vi) Conservation authorities will be encouraged to review and comment on draft fisheries management plans prepared by the districts.

(vii) District fisheries staff will work closely with local conservation authorities in fisheries management planning to ensure that fisheries management and water management are co-ordinated.

Map 4

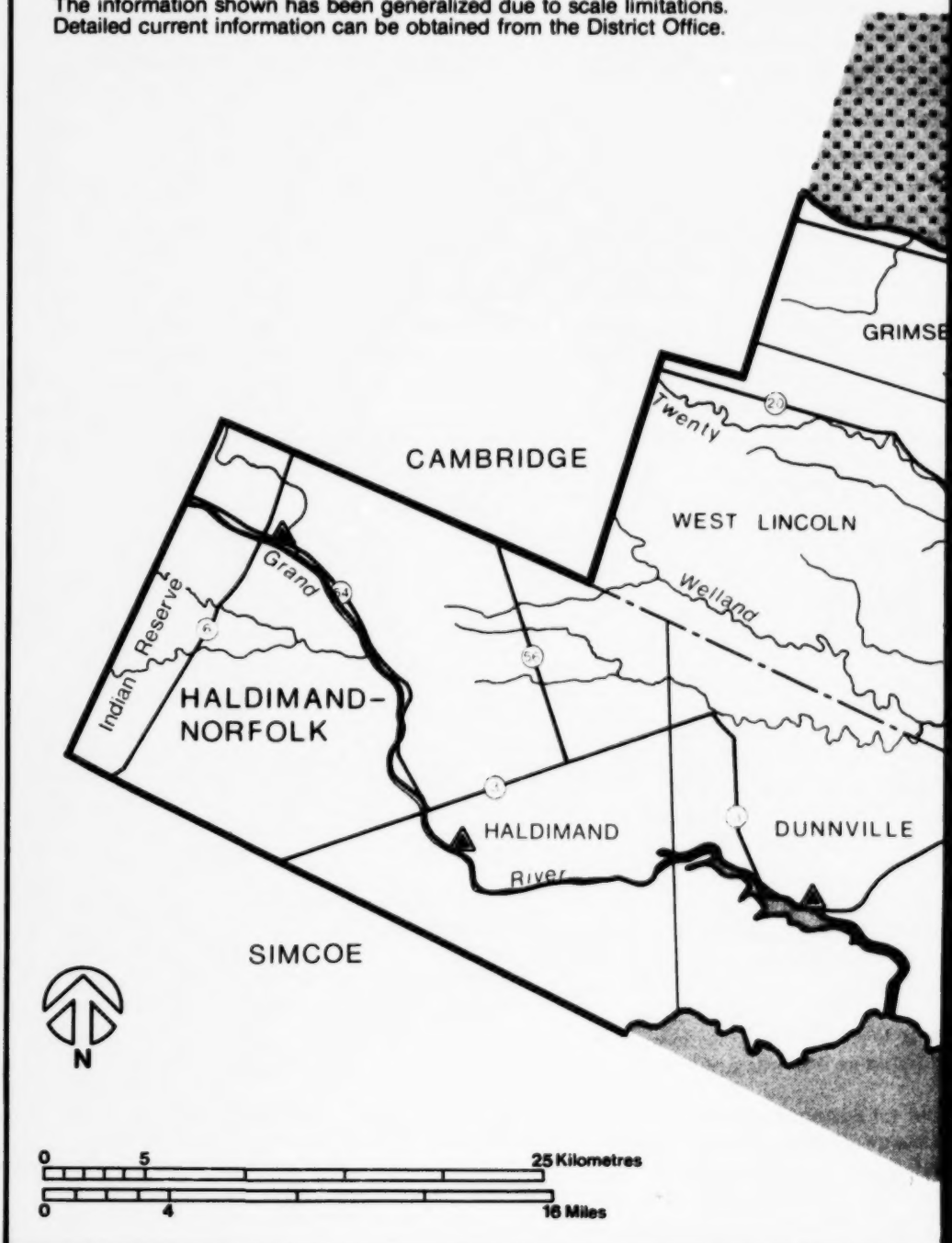
NIAGARA DISTRICT

FISHERIES

LEGEND

- Local Municipal Boundary
- Regional Municipal Boundary
- MNR District Boundary

The information shown has been generalized due to scale limitations.
Detailed current information can be obtained from the District Office.



Important Fisheries

- Cold Water Stream
- Cold and Warm Water Lakes
- Warm Water Lake
- Bait Fish
- Warm Water Stream

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(viii) Fisheries staff will work with the Ministry of the Environment to ensure that the protection of the groundwater regime receives special attention in significant watersheds.

(ix) District staff will work with the Ministry of Agriculture and Food and landowners to minimize conflicts between fisheries concerns and agricultural interests. For example, where streams with significant sports fisheries are also identified as municipal drains under the *Drainage Act*, the ministry will consult with the Ministry of Agriculture and Food regarding any fisheries management proposals.

e. Plan Input and Review Guidelines

(i) The ministry will encourage the adoption of official plan policies which identify important fish habitat and protect it from incompatible development. Policies should also ensure that any land use activities occurring within or adjacent to fish habitat are carried out in a manner that keeps adverse effects to a minimum.

(ii) The ministry will encourage the adoption of zoning by-laws which:

- permit fisheries management in or adjacent to all lakes or rivers; and
- ensure activities adjacent to fishery resource areas are compatible with fish habitat management.

(iii) The ministry will provide information on existing and potential fish habitat and the potential impact of development on fisheries.

(iv) The ministry will review development proposals and encourage the incorporation of design features which remove or minimize any adverse effects on the fish habitat; and which maintain or provide access to high quality sport, commercial or bait fish resource areas.

(v) The ministry will encourage:

- the inclusion of water access points in shoreline development plans; and
- land use management policies which recognize the potential of recreational and commercial fisheries.

(vi) Specific developments that require waterbody alterations such as diversions or filling should be accompanied by detailed plans under the *Lakes and Rivers Improvement Act.*

E: wildlife

1. OBJECTIVES

The objective for wildlife management in southern Ontario is to provide opportunities for social and economic benefits from wildlife recreation and fur harvest consistent with the maintenance of healthy wildlife populations.

More specific objectives are:

Hunting

- to provide opportunities sufficient to maintain the present rate of participation and quality of hunting by residents;
- to maintain the contribution to the economy of hunting by non-residents;

Trapping

- to sustain the maximum yield from wild furbearer populations, while maintaining the present diversity of fur types;

Other Uses

- to prevent additional species from becoming endangered or threatened;
- to improve the status of existing endangered or threatened species with the objective of removing them from the endangered species list; and
- to maintain populations of all wildlife species (both non-game and game) at levels sufficient to:
  - provide opportunities for recreational enjoyment, aesthetic appreciation, scientific investigation, and educational uses,
  - provide benefits from tourism,
  - ensure environmental quality and ecosystem integrity, and
  - ensure the safety of the public.

2. TARGETS

The targets for the wildlife program in Niagara District are:

Hunting

- to provide by the year 2000, 132,700 opportunities of hunting recreation per year, comprising 87,100 opportunities of small game hunting, 14,900 opportunities of big game hunting and 30,700 opportunities of waterfowl hunting;

Trapping

- to manage populations of wild furbearers such that an average annual harvest of 15,400 pelts can be achieved by the year 2000 while maintaining the present diversity of fur species; and

Other Uses

- to ensure no native wildlife species becomes extinct.

A target for wildlife viewing has not been included due to the difficulty of measuring this activity and of assessing the influence of management actions. A viewing target will be defined through ongoing policy development and will be incorporated into the *Land Use Guidelines* at an appropriate opportunity.

3. RESOURCE ANALYSIS

Niagara District supports a rich diversity of wildlife and wildlife habitat which is fairly uniformly distributed across the district. The only exceptions to this are the large urban areas and intensively farmed lands below (north) of the Niagara Escarpment. The location of the district at the northern edge of the Carolinian Forest means that the area has flora and fauna both common and uncommon to the rest of the Central Region of this ministry. No endangered wildlife species, as defined in the *Endangered Species Act*, currently reside in the district.

Estimates of the size of the district's wildlife populations are not presently available. Deer are common throughout the district. In severe winters, deer tend to concentrate in the larger woodlots. Substantial populations of commonly hunted small game species, such as cottontail rabbit, european hare and raccoon, are located throughout the area. Riverine wetlands, drowned creek mouths and lakeshore wetlands provide good areas for waterfowl and lowland wild furbearer production. Trapping in Niagara is centered around muskrat and raccoon, with mink, squirrel, weasel, fox and coyote being of secondary importance. Over 300 species of birds have been identified in the Regional Municipality of Niagara.

Small game and waterfowl hunter surveys indicate that hunter efforts in Niagara District have decreased approximately 48% between 1971 and 1978 to 94,800 hunter days. Until recently, big game hunting (i.e., deer hunting) in Niagara was limited to an archery season. The numbers of hunters and deer harvested have increased with the addition of a "muzzle loader" season and controlled shotgun season. In the 1981 muzzle loader and shotgun season, 601 hunters are known to have harvested 141 deer. There are approximately 800 bowhunters in the district who harvest approximately 100 deer annually.

It appears that the hunting target of 132,700 opportunities by the year 2000 may be achievable based on hunting levels of the early 1970's. The reasons for the recent decline in hunting, indicated by small game surveys, must be determined. Some problems are readily apparent. Forested land, used as a measure of huntable land, is estimated to have decreased 12% between 1954 and 1978. The implementation of municipal, "no firearms discharge" by-laws has closed 13% of the land base to hunting. The resulting relatively small land area potentially available for hunting, coupled with Niagara's high population, has created a hunting pressure in the district of much greater intensity than nearby areas.

At the same time upland wildlife populations are being threatened by loss of habitat through residential or industrial developments and urban expansion. These developed areas will, however, support some non-game wildlife species.

The five year (1974-79) average wild furbearer harvest in the district is 12,900 pelts. Muskrat harvest levels have fluctuated in spite of increased fur prices and numbers of trappers. This could suggest that the production limit for muskrat has been reached and limited opportunities for expansion exist. Wetland reclamation for residential, industrial and harbour developments poses a serious threat to the continued welfare of lowland species. Achievement of the fur target will require increased efforts of the public and private sector to protect wetland areas. The impact of restricted access to private lands on harvest levels has not been studied.

Nonconsumptive uses of wildlife are nearly double consumptive uses in the district. It is expected that demands for near urban wildlife viewing opportunities will increase with rising transportation costs. It should be possible to meet these demands based on the large resource potentially available. New policies and programs are being considered by the ministry for habitat management and protection of non-game species.

4. PROGRAM STRATEGY

a. Contribution to General Policies

Public Safety

- promote the hunter education program;
- enforce hunting regulations; and
- participate in rabies suppression programs.

Environment

- identify and protect the habitat of rare and endangered wildlife species;
- identify and seek to protect significant wetlands and ensure that their values are given due recognition in planning; and
- prepare and implement class and individual environmental assessments as required.

The contribution to the integrated resource management policy is outlined in section c, Resource Management Integration Guidelines.

b. Important Resource Areas and Area Strategies

The most significant habitat types in Niagara District, in terms of protecting and maintaining desirable wildlife species and meeting wildlife targets, are wetlands, shoreline areas (Map 5) and woodlots.

Extensive wooded areas in the district are located along the Niagara Escarpment, along rear lot lines and in river valleys such as the Grand River and Twelve Mile Creek. Smaller woodlots are scattered throughout the area. Woodlots provide cover for mammals, such as deer, and nesting sites for a variety of birds. These areas have good potential for wildlife viewing.

The district's two candidate parks, one provincial park and other public lands contain forested wildlife habitat. The wooded areas along the Niagara River owned by the Niagara Parks Commission are frequented by many song birds and a variety of mammals. Several wooded areas owned by conservation authorities, such as St. Johns Conservation Area and Woodend Conservation Area operated by the Niagara Peninsula Conservation Authority, provide wildlife viewing opportunities, education and habitat management demonstration sites and wildlife refuge areas. Wildlife management should be an important component of land use plans in these areas. The district will continue to input to these plans to ensure wildlife concerns are addressed.

The majority of wooded areas in the district are privately owned. Contributions from these areas to wildlife target achievement will be sought through wildlife extension programs, wildlife management agreements and the incorporation of wildlife considerations into woodlot management agreements entered into by this ministry with private landowners. The district will attempt to ensure the perpetuation of diverse quality habitats of both game and non-game species.

High potential wetlands in Niagara District are: Wainfleet Bog, Willoughby Marsh, the Grand River marshes and the Twenty, Sixteen and Fifteen Mile Creek drowned river mouths. These areas are key to waterfowl and muskrat production and provide a variety of habitats suitable for water, marsh and land birds, and mammals such as deer, cottontail rabbits and foxes. The ministry will encourage the preservation of these wetland areas.

The district currently manages two wetland areas under wildlife management agreements to assist in meeting wildlife targets (Map 5):

- the Mud Lake Wildlife Management Area in the City of Port Colborne is managed by the district under an agreement with the St. Lawrence Seaway Authority and a private landowner. The property is operated as a low intensity use area for waterfowl hunting and nature appreciation; and
- the Willoughby Marsh Conservation Area is managed by the district for grouse and woodcock under an agreement with the Niagara Peninsula Conservation Authority. This area is envisaged as suitable only for low intensity use as outlined in the wildlife management plan.

The district will seek to negotiate other wildlife management agreements with wetland owners to ensure these areas are not reclaimed for development.

The Niagara River and the Great Lakes shorelines provide feeding, staging and overwintering habitat for waterfowl and shorebirds. Many of these areas are frequented for wildlife viewing purposes and waterfowl hunting in the fall. Management plans prepared for shoreline areas and along the Niagara River by this district, conservation authorities and other agencies should consider the need to maintain access to these areas.

Urban areas and other parts of the district are considered lower potential wildlife areas. However, these areas do support a variety of wildlife and assist in meeting the viewing requirements of much of the population. Wildlife management information and extension services will be provided to the public in urban areas by the district upon request whenever possible.

The wildlife resources in the important resource areas should be maintained, and access to these

resources increased or maintained to ensure the district wildlife targets are achieved. The guidelines listed below will be followed to integrate district wildlife interests with other resource concerns of this ministry and other agencies.

c. Resource Management Integration Guidelines

(i) Wildlife staff will work to develop criteria and management guidelines for forest management prescriptions that will enhance wildlife habitat.

(ii) District wildlife staff will prepare wildlife management plans for all wildlife management areas and wildlife agreement areas and will circulate these to staff in other programs for review.

(iii) Wildlife management in provincial parks will conform to master plans and provincial parks planning and management policies. Wildlife management in candidate parks will occur within the framework of approved management guidelines.

(iv) Wildlife management proposals for significant areas of natural and scientific interest will be reviewed with the parks program.

(v) Proposals for wildlife management on lands under interim property management will be circulated to the lands program for review.

d. External Co-ordination Guidelines

(i) Official plan and zoning policies will be reviewed before decisions are made on wildlife habitat management.

(ii) While the Niagara Escarpment plan is being finalized, the ministry will not undertake any actions that would compromise the intent of the proposed plan. Once the plan is approved, the ministry will ensure that its wildlife management programs are carried out in conformity with the plan.

(iii) The district will offer assistance to municipalities in determining appropriate areas for application of "no firearms discharge" by-laws.

(iv) The district will work cooperatively with government agencies at the federal, provincial and municipal levels, and with private landowners, developers and other members of the private sector to achieve the protection of all wildlife resources (both game and non-game). Specific approaches will include:

- working with conservation authorities and other public agencies to encourage and assist wildlife management on their properties;
- encouraging greater non-government participation in the identification and management of wildlife habitat;
- providing habitat management consulting services to landowners; and
- entering into agreements with property owners to ensure habitat on private land is protected.

(v) The ministry will work with other agencies, groups and individuals on programs that will encourage access to wildlife resources on private land.

e. Plan Input and Review Guidelines

(i) The ministry will encourage the adoption of official plan policies which place wildlife management areas, high potential wetlands and other critical wildlife habitat in a land use category that permits only uses compatible to wildlife production.

(ii) The ministry will encourage the adoption of by-laws that:

- permit wildlife management, hunting and trapping in all appropriate areas; and
- protect wildlife habitat by allowing only those uses which are compatible with wildlife production.

(iii) The ministry will review development proposals and encourage:

- compatibility with the production and harvest of commercial fur;
- minimization of adverse effects on habitat critical to target achievement; and
- maintenance or provision of access to high quality wildlife oriented recreation areas essential to the fulfillment of program targets.

(iv) The ministry will provide information on existing wildlife habitat.

(v) Specific developments that require waterbody alterations such as diversions or filling, should be accompanied by detailed plans for review under the *Lakes and Rivers Improvement Act.*

Map 5

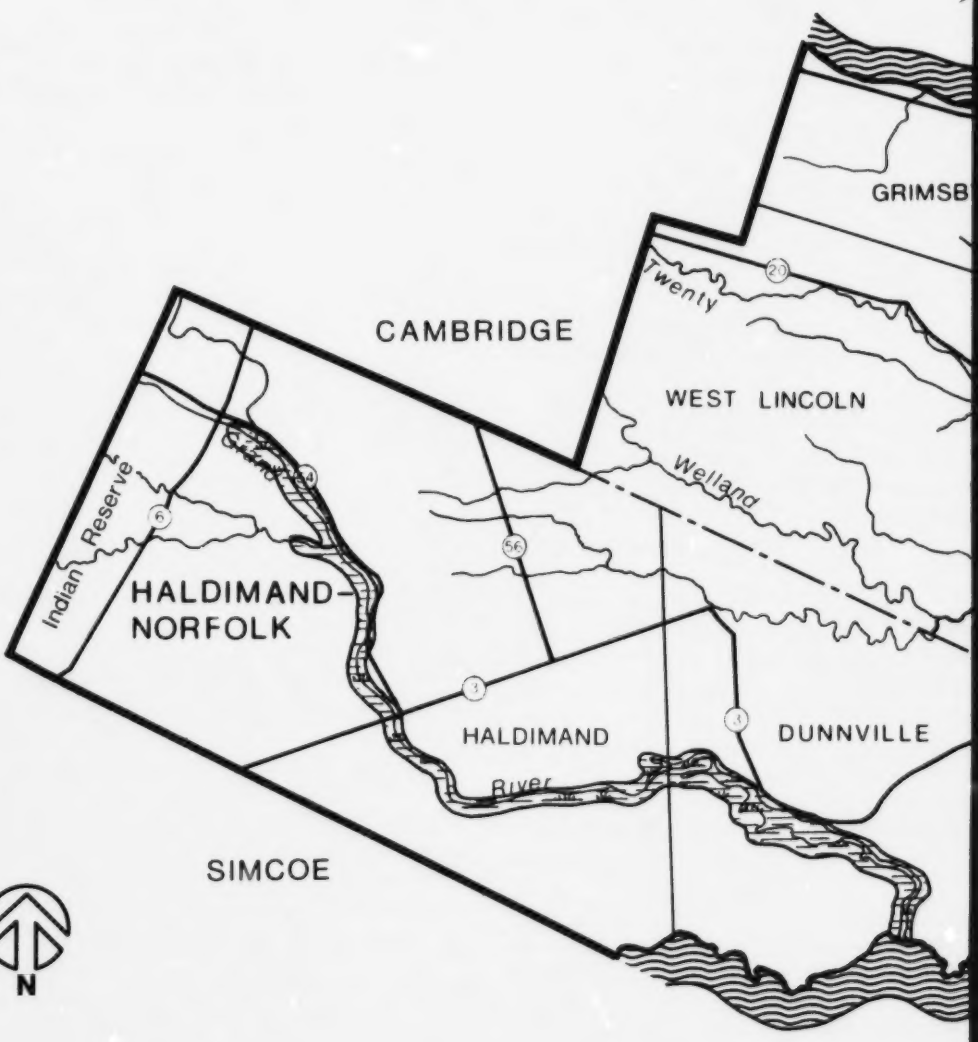
NIAGARA DISTRICT

WILDLIFE

LEGEND

- Local Municipal Boundary
- Regional Municipal Boundary
- MNR District Boundary

The information shown has been generalized due to scale limitations.
Detailed current information can be obtained from the District Office.



Important Resource Areas

- Wetlands
- Waterfowl Habitat
- Wildlife Management Area

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F: provincial parks

1. OBJECTIVES

The objectives for the provincial parks system in southern Ontario are:

Protection
- to protect provincially significant elements of the natural and cultural landscape of Ontario;

Heritage Appreciation
- to provide opportunities for exploration and appreciation of the outdoor natural and cultural heritage of Ontario;

Recreation
- to provide provincial park outdoor recreation opportunities, ranging from high intensity day use to low intensity wilderness experiences; and

Tourism
- to provide Ontario's residents and out-of-province visitors with opportunities to discover and experience the distinctive regions of the province.

2. TARGETS

The targets for the provincial parks system in Niagara District are:

Protection
- **Life Science** to protect provincially significant life science features in Niagara District which contribute to the representation of the twenty-six site districts in southern Ontario;
- **Earth Science** to protect provincially significant, representative and special earth science features in Niagara District which contribute to the representation of the thirty-five geological environments of southern Ontario;
- **Historical Resources** to protect provincially significant landscape-related pre-historical and historical resources which contribute to representation of the fourteen themes of southern Ontario's history;

Heritage Appreciation
- to provide opportunities for exploration and appreciation of the outdoor natural and cultural heritage of Niagara District; and

Recreation and Tourism
- to provide annually, by the year 2000, the following recreation opportunities for residents and visitors to provincial parks in Niagara District:

  Day Use
  293,000 picnicking opportunities
  416,900 swimming opportunities

  Extended Use
  54,400 camping opportunities

(These recreation activities chosen for target setting are examples of a more complete range of day use and extended use activities to be provided in provincial parks.)

3. RESOURCE ANALYSIS

Crown land in Niagara District managed for park purposes is quite limited. Little land acquisition is planned for the near future. As in other district programs, successful target achievement will require the integration of district concerns with other agency and individual interests.

a. Protection

The Ministry of Natural Resources has protection targets related to life and earth science features and historical resources. To assist in achieving these targets, the ministry has identified areas of natural and scientific interest, which are areas of land and water containing natural landscapes or features that have values related to protection, natural heritage appreciation, scientific study or education.

Areas of natural and scientific interest vary in level of significance. The most significant may contribute to the achievement of the ministry's protection objective. The identification of areas of natural and scientific interest encourages the protection of additional areas not regulated as provincial parks and provides a focus for both the public and private sectors to contribute to the protection of Ontario's natural heritage.

In the Niagara District, 22 significant life science areas and 14 significant earth science areas have been identified (Map 6).

Life science representation is concerned with the protection of areas which characterize distinctive environments. In the Niagara District, two distinct environments, called site districts, can be identified (Map 6). In each of these site districts, a number of areas containing relatively undisturbed indigenous biotic communities and their associated flora and fauna have been identified for representation. Table 4 lists the areas.

The principle of representation for earth science features is to protect examples of features which illustrate Ontario's earth science history. Earth science features are physical elements of the natural landscape created by the earth's processes. They can be broadly categorized into rock strata, fossil assemblages, and landforms.

The selection of earth science areas of natural and scientific interest has focused on representing features that best illustrate various themes. Table 5 lists the areas which have been identified to represent three earth science themes.

Of the 36 significant life and earth science features listed in Tables 4 and 5, 2 are located within Short Hills candidate park, 6 are located on public land, and the remaining 28 are associated with land which is partially or entirely under private ownership. Target achievement is potentially more feasible on Crown and public land holdings. Nevertheless, natural areas on private land can be protected through the development of "other than park" mechanisms (e.g., private landowner agreements).

The type of protection each site requires will be variable, depending primarily on the sensitivity of the feature(s) to be protected. In the case of many earth science sites, a number of uses may be compatible with protection of the features, including intensive agriculture. In the case of particularly sensitive biological communities, protection from certain land uses may be highly desirable. The protection strategies and setting of priorities are subjects of continuing study.

Only preliminary work has been done toward identifying significant historical features. This information will be incorporated into the *Land Use Guidelines* when it becomes available.

b. Heritage Appreciation

Establishing natural environment and waterway classes of provincial parks in each of the site districts of southern Ontario is the principal means of representing the natural and cultural landscapes of southern Ontario. Opportunities to explore and appreciate these landscapes can be provided through self-use facilities and visitor services programs. The identification of areas of natural and scientific interest also contributes to the heritage appreciation objective.

Site districts 7-2 and 7-3 are located within Niagara District (Map 6). Natural environment park representation for site district 7-2 is satisfied by Pinery and Turkey Point Provincial Parks in the Southwestern Region.

Establishment of a park at Short Hills should partially represent site district 7-3, although the candidate park is actually located adjacent to site district 7-3 in site district 7-2. Given the level of urbanization of site district 7-3, it is felt that no other opportunity exists to establish a natural environment park.

The Niagara River which runs through site districts 7-2 and 7-3 can potentially contribute to the waterway representation. A large portion of this area is owned by the Niagara Parks Commission and is operated as parkland. The Grand River could also contribute to waterway representation, although it is not intended that the Grand River become a waterway class provincial park.

c. Recreation and Tourism

Rock Point Provincial Park is the only regulated park operated by this ministry in Niagara District. This recreation class park is located east of Port Maitland on the north shore of Lake Erie. Services and facilities are provided for camping, swimming, picnicking and other recreation activities. The lakeshore area provides opportunities for birdwatching and studying Devonian fossils.

There are also two candidate parks in the district (Map 6). Short Hills candidate park, located just north of Fonthill, was acquired for designation and use as a natural environment park. James N. Allan candidate park was acquired to be managed as a recreation class provincial park. Both candidates are presently undeveloped and are used for day use activities only.

Table 7 summarizes the ability of Niagara District to meet the recreation targets in the existing park and candidate parks. It should be possible to meet the camping and picnicking targets. While there is a slight variation between the potential swimming beach available and the targeted amount, increased efforts by the private sector and other public agencies may partly compensate for this. For example, the Niagara Peninsula Conservation Authority has recently acquired under a lease a property on Lake Ontario.

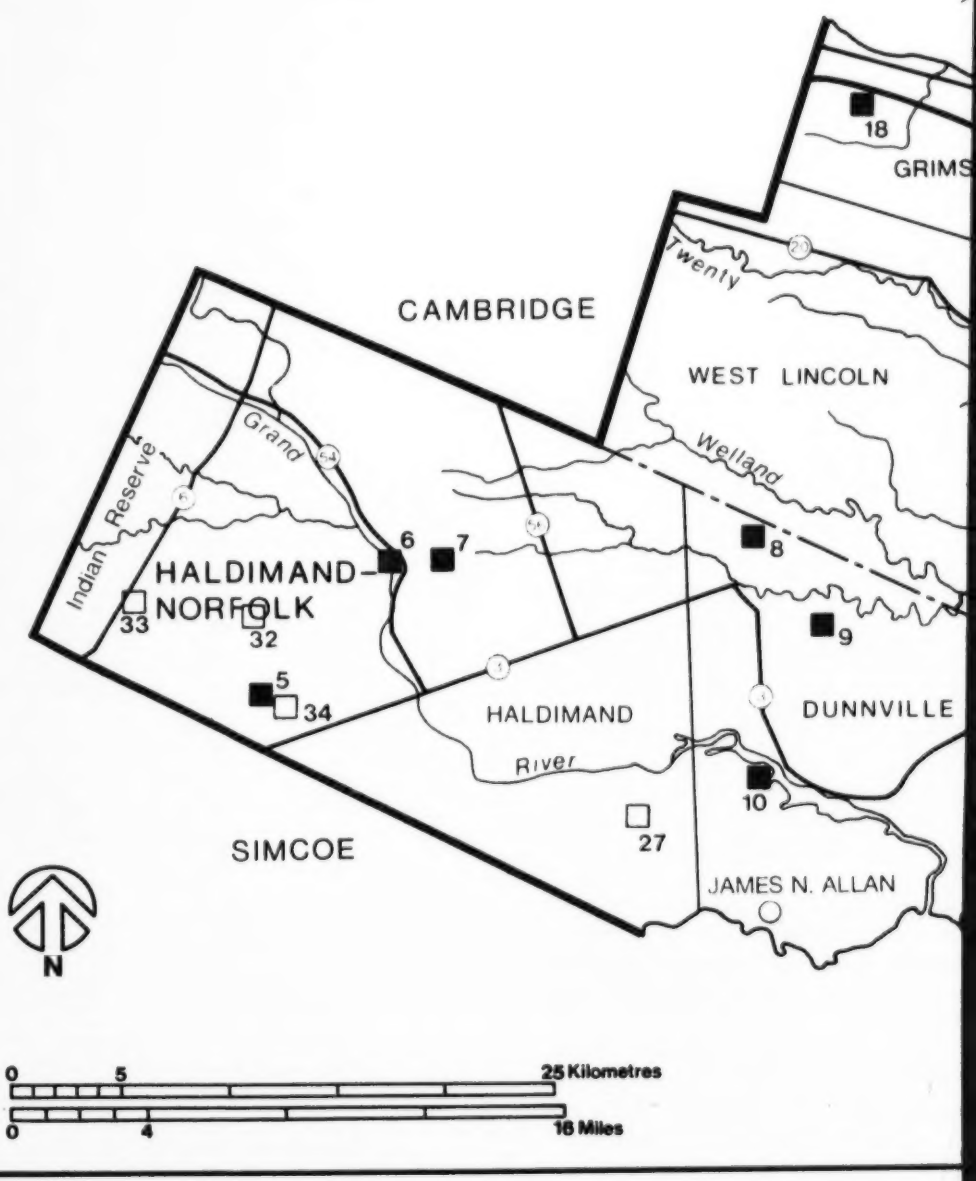
Map 6

NIAGARA DISTRICT
PROVINCIAL PARKS AND RECREATION

LEGEND

- Local Municipal Boundary
- Regional Municipal Boundary
- MNR District Boundary

The information shown has been generalized due to scale limitations.
Detailed current information can be obtained from the District Office.



Important Resource Areas

- Existing Provincial Park
- Candidate Provincial Park
- Areas of Natural and Scientific Interest — Life Science
- Areas of Natural and Scientific Interest — Earth Science
- 7-3 Site District Boundary and Number

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TABLE 4 SIGNIFICANT AREAS OF NATURAL AND SCIENTIFIC INTEREST— LIFE SCIENCE

Site District	Representation in Provincial Parks	Representation in Candidate Parks	Other Sites (Crown, public and private lands)
7-2	—	Short Hills	1. South St. Anns Slough Forest
			3. Fonthill Sandhill Valleys
			4. Niagara Gorge
			5. Oriskany Sandstone and Woodlands
			6. Mount Healy Riparian Islands
			7. North Cayuga Slough Forest
			8. Caistor-Canborough Slough Forest
			9. Attercliffe Station Slough Forest
			10. Dunnville Grand River Alluvial Marshes
			11. Wainfleet Peat Basin Heath
			12. Humberstone Muck Basin Swamp Forest
			13. Empire Beach Backshore Basin Forest
			14. Point Abino Peninsula Sandland Forest
			15. Lyons Creek Floodplain Wetland
			16. Willoughby Clay Plain Muck Basin Forest
			17. Navy Island
7-3	—	—	18. Niagara Section Escarpment
			19. Beamsville Escarpment
			20. Jordan Valley
			21. Fifteen-Sixteen Mile Creek Valleys
			22. Two Mile—Four Mile Creek Plain

4. PROGRAM STRATEGY

a. Contribution to General Policies

Environment

- identify and seek to protect representative or endangered elements of the natural and cultural landscape; and
- prepare and implement class and individual environmental assessments as required.

Energy

- on-site gas sources will continue to be used for water and space heating at Rock Point Provincial Park.

The contribution to the integrated resource management policy is covered in section c, Resource Management Integration Guidelines.

b. Important Resource Areas and Area Strategies

(i) Protection The thirty-six areas of natural and scientific interest in the district require varying types of management (Map 6). Tables 4 and 5 are subject to revisions as more information becomes available and site conditions change.

Where areas of natural and scientific interest occur on public land managed by the Ministry of Natural Resources, the ministry will ensure that the land uses and activities which occur provide for the protection of the identified values.

On private lands the ministry will, through cooperation with others, attempt to ensure that landowners are aware of significant features on their properties and seek the owner's cooperation in protecting such features. The identification of areas of natural and scientific interest on private land does not indicate an intent of the ministry to acquire this land, or to restrain or prevent any private use of land.

Strategies for protecting significant areas of natural and scientific interest could include:

TABLE 5 SIGNIFICANT AREAS OF NATURAL AND SCIENTIFIC INTEREST—EARTH SCIENCE

Theme	Representation in Provincial Parks	Representation in Candidate Parks	Other Sites (Crown, Public and Private Lands)
Niagara Escarpment	—	Short Hills	23. Balls Falls Bedrock Gorge
			24. Twelve Mile Creek Re-entrant Valley—Dry Falls, De Cew Falls, Terrace Creek, McSherry Lane, Rockway Falls, Fonthill Kame Delta
			25. St. Davids Buried Valley
			26. Niagara River Bedrock Gorge
			35. Twenty Mile Creek Drowned River Mouth
Paleozoic (Silurian)			28. Humberstone Quarry—Silurian Bedrock site
Paleozoic (Devonian)			27. Upper Quarry-Devonian Bedrock site
			29. Ridgemount Quarry-Devonian Bedrock site
			34. Oriskany Sandstone and Woodlands—Devonian Bedrock site
Raised Beaches			30. Ridgewood Raised Beaches site
			31. Winger Raised Beaches site
			32. Clanbrassil Raised Beaches site
			33. Hagersville Raised Beaches site

TABLE 6 NATURAL ENVIRONMENT AND WATERWAY REPRESENTATION

Site District	Natural Environment Park Representation	Waterway Park Representation
7-2	Pinery and Turkey Point Provincial Parks Southwestern Region	Niagara River potentially contributes
7-3	Short Hills candidate park	Niagara River potentially contributes

- establishing agreements with landowners that would guarantee appropriate management practices;
- where a property is owned by another public agency, negotiating for management prescriptions which would protect the feature(s) on the site; and
- encouraging supportive municipal policies.

The type of strategy used will depend primarily on the sensitivity of the feature to be protected and ownership of the land. In the case of many earth science sites, a wide variety of uses are compatible with the features. Some limitations on land uses may be appropriate in certain sensitive biological communities. The protection strategies are the subject of continuing study.

Each district program is responsible for ensuring their management activities undertaken in these areas are compatible with the significant features.

(ii) Heritage appreciation The Short Hills candidate park will continue to be managed to protect park values and ensure the opportunity of establishing a natural environment class park.

(iii) Recreation and tourism Rock Point Provincial Park and the Short Hills and James N. Allan candidate parks are key to recreation target achievement.

TABLE 7 RECREATION TARGETS FOR PROVINCIAL PARKS

	Day Use				Extended Use	
	No. of swimming opportunities	No. of metres of beach	No. of picnicking opportunities	No. of picnic tables	No. of camping opportunities	No. of campsites
Total target (year 2000)	416,900	2,200	293,000	1,220	54,400	230
Existing facilities (year 1982)	113,700	600	112,900	470	30,800	130
New facilities required by the year 2000	303,200	1,600	180,100	750	23,600	100
Available potentials						
—in existing parks Rock Point	Nil	Nil	24,000	100	21,300	90
—in candidate parks Short Hills	Nil	Nil	76,900	320	2,400(1)	10(1)
James N. Allan	208,500	1,100	79,300	330	Nil	Nil
Total potential	208,500	1,100	180,200	750	23,700	100
Target variances	-94,700	-500	Nil	Nil	Nil	Nil

(1) Walk-in sites only

The potential picnicking and camping facilities at Rock Point should be developed and existing facilities maintained.

The Short Hills candidate park contains potential camping and picnicking facilities. A master plan already completed for Short Hills candidate park will be implemented as funds permit, if the area is designated a provincial park. In the interim, uses and facilities which complement the achievement of parks objectives will be permitted. Trail activities are planned (equestrian, hiking, cross-country skiing), with overnight facilities provided for hikers.

The James N. Allan candidate park can potentially provide picnicking and swimming beach facilities needed to meet the recreation targets. Interim management guidelines consistent with the proposed recreation class of this candidate will be followed until provincial park status is achieved. The guidelines will ensure that access to the swimming beach is maintained.

Before the James N. Allan candidate park could be considered for regulation under the *Provincial Parks Act*, the following conditions would need to exist:

- a greater demand for day use opportunities including picnicking and swimming; and
- a need to regulate day use activities.

All of the provincial park proposed strategies require the co-ordination of ministry program concerns and the integration of other land use interests. The following guidelines outline means of achieving these objectives.

c. Resource Management Integration Guidelines

(i) All programs will be considered during the development and review of park master plans and management plans.

(ii) Where possible, provincial parks will contribute to the achievement of the objectives of other programs.

(iii) Interim management guidelines will be prepared for each candidate park. The interim management guidelines will identify:

- park values to be protected;
- the resource management prescriptions necessary to protect those values; and
- restrictions on use.

d. External Co-ordination Guidelines

(i) The ministry will encourage the development of a balanced recreation system by promoting improved co-ordination among the ministry, conservation authorities, municipalities, other public agencies and the private sector.

(ii) The ministry will promote landowner agreements, where appropriate, to protect significant

areas of natural and scientific interest.

(iii) The ministry will encourage outside agencies and other groups to protect significant areas of natural and scientific interest.

(iv) While the Niagara Escarpment plan is being finalized, the ministry will not undertake any actions that would compromise the intent of the proposed plan. Once the plan is approved, the ministry will ensure that all provincial park development and management is carried out in conformity with the plan.

e. Plan Input and Review Guidelines

(i) The ministry will encourage the adoption of official plan policies which identify existing provincial parks and candidate parks and places them in a land use category that recognizes park development and use.

(ii) The ministry will encourage land use designations in official plans which permit only those uses on lands adjacent to provincial parks which are compatible with park values.

(iii) The ministry will encourage the adoption of official plan policies and designations which provide appropriate protection to significant areas of natural and scientific interest.

G: general recreation

1. OBJECTIVES

The ministry's recreation management efforts are directed primarily to hunting, fishing and provincial parks. There are a number of other activities which the ministry carries out for which no objectives have been developed.

The tentative objectives for general recreation in southern Ontario are:

- to provide and to encourage a wide variety of outdoor recreation opportunities ranging from day use to back-country experiences;
- to identify, select and protect provincially significant natural and cultural resources; and
- to provide an economic contribution through tourism.

2. TARGETS

Targets have not been developed for general recreation.

3. RESOURCE ANALYSIS

General recreation includes activities other than hunting and fishing, and which occur outside provincial parks. The majority of the recreational opportunities potentially available on ministry owned public land in Niagara District occur within the existing provincial park and on the two candidate provincial parks. A 1.7 hectare (4.6 acre) parcel of land at the north end of Casablanca Boulevard in Grimsby, acquired by this ministry, provides public access to Lake Ontario and approximately 180 metres of beach. Trail-oriented recreation is available on the Ruigrok Tract agreement forest and the Willoughby Marsh Conservation Area managed by this ministry in cooperation with the Niagara Peninsula Conservation Authority.

Numerous groups and agencies also contribute to the achievement of the general recreation objectives. There are a large number of privately operated recreation and tourism businesses in the district. Facilities on properties owned by conservation authorities provide many recreational opportunities. Hydro corridors, lands bordering the Welland Canal, Niagara Parks Commission lands and other public lands can be used for recreation purposes. Hiking opportunities are available on the Bruce Trail and other trails which cross the district along the brow of the Niagara Escarpment and pass through the Short Hills candidate park.

The Lake Ontario and Lake Erie shorelines, the Niagara River and the Niagara Escarpment in Niagara District are important recreation and tourism resources. Recreation and tourism provide an important, although in many cases seasonal, contribution to the local economy.

It is part of the ministry's objective to provide on Crown land and encourage on private land, a continuous contribution to the economy from tourism and its related industries.

4. PROGRAM STRATEGY

a. Contribution to General Policies

Environment

- identify provincially rare and endangered species of native plants and take appropriate action for their protection.

b. Important Resource Areas and Area Strategies

Private recreation and tourism operations and properties owned by other public agencies are key to meeting future near-urban recreation demands in the district.

The ministry will assist groups and agencies through grants provided to conservation authorities, funding some municipal recreation development, the granting of permission to develop recreational trails on appropriate public lands and the provision of information and advice on significant natural features. The district will also maintain contact with local suppliers of recreation opportunities, such as trail clubs, and offer advice on the development and management of facilities by these private suppliers.

Consideration will be given to providing trail access and trail-related facilities on property managed by this ministry (e.g., Short Hills candidate park), which is intersected by long distance trails such as the Bruce Trail. Decisions on the provision of these facilities will be made through the master and management planning processes in consultation with trail groups.

c. Resource Management Integration Guidelines

(i) Parks staff will provide technical advice and assistance to the other programs in the planning and operation of recreation facilities on lands managed primarily for purposes other than recreation.

(ii) Any development of access points will be done by parks staff only after consultation with the other programs, in particular, the fish, wildlife and lands programs.

d. External Co-ordination Guidelines

(i) The ministry will encourage outside agencies and interest groups to develop and maintain recreational trails.

The ministry welcomes requests for permission to develop trails on Crown lands and other lands it manages. In reviewing these requests, the ministry will consider the following factors:

- the existing use of the property, including already established trails;
- the role the trail will play in linking existing trails outside ministry lands;
- the potential impacts on fisheries, wildlife, park and forestry values; and
- planned uses of the property.

Trails will be permitted within significant areas of natural and scientific interest where they will not conflict with the protection of the feature. New trail proposals in candidate parks will not be considered until interim management plans have been prepared.

(ii) The ministry will continue to help municipalities provide recreational and park opportunities which complement existing public recreation.

H: land administration

1. OBJECTIVE

The objective for land administration in southern Ontario is to facilitate the orderly development and conservation of Ontario's land and water resources.

2. TARGET

Specific land administration targets have not been developed.

3. PROGRAM RESPONSIBILITIES

The ministry manages approximately 940 hectares (2320 acres) of public land in Niagara District. This total does not include the beds of most navigable water courses which are public lands. Key areas of concern are the beds and shorelines of Lake Ontario, Lake Erie and the Niagara River. Particular problems arise when dry land uses infringe on the public lake or river beds.

The land administration function is:

- to protect the capability and quality of public land;
- to plan and control its use;
- to dispose of the land as required; and
- to acquire areas needed by other ministry programs.

The ministry carries out this custodianship by authorizing appropriate land uses through licences, leases and permits, asserting the Crown's interest in matters of illegal occupation, maintaining records of land grants and clarifying land claims.

The ministry also reviews the navigability of watercourses.

3. PROGRAM STRATEGY

a. Contribution to General Policies

The contribution to the integrated resource management policy is covered in section c, Resource Management Integration Guidelines.

b. Important Activities

The land administration program attempts to ensure the resources on public land in the district are efficiently used. The resource areas include:

- Great Lakes and interconnecting waterways;
- other navigable watercourses and acquired lands; and
- all other watercourses including the Welland Canal and harbours.

Public access to the Crown land in these areas should be maintained whenever possible. Also industrial, commercial and recreational activities on these watercourses must be integrated to avoid conflicts, efficiently use the resources, and ensure the collection of royalties or rent for use of Crown land.

Also administrative assistance will be provided, where necessary, in interim property management activities.

c. Resource Management Integration Guidelines

(i) Land and water management plans (e.g., interim property management and Crown land management plans) and major revisions will be circulated to all supervisors for review to ensure that all district program concerns are considered and supported wherever possible.

(ii) Any proposed disposition will be reviewed with the other programs.

(iii) Disposal of Crown land will consider the availability of suitable private land, the potential competition with the sale of private land and potential impact on adjacent use. Private initiatives will be encouraged.

(iv) The lands program will manage acquired lands under interim property management in a manner consistent with its character and its capacity to withstand use. Management activities will not foreclose options for eventual classification and development.

(v) Approvals which the lands program is responsible for will be co-ordinated with the other programs.

(vi) The *Public Lands Act* will be used where appropriate to regulate the dumping of fill and other materials, and the construction of docks, marina facilities and other structures on Crown land.

(vii) The removal of earth materials from any bed, bank, beach or shore will be regulated by the *Beach Protection Act,* where appropriate.

d. External Co-ordination Guidelines

(i) Lands declared surplus by the ministry will be offered first to public agencies.

(ii) Any disposition of Crown land to an individual must receive municipal approval.

(iii) Proposed dispositions will be reviewed with the local municipality concerned.

(iv) Communications with lakeshore municipalities will be maintained and advisory services offered with respect to the use of beach lands.

(v) Lakeshore studies of Lakes Ontario and Erie will be completed in cooperation with local municipalities and other government agencies, to guide resource management activities in these areas.

e. Plan Input and Review Guideline

(i) In addition to the other specific program concerns, the ministry will discourage, through plan input and review, development that:

- has a detrimental impact on resource management practices existing or proposed on Crown land;
- occurs on land designated and approved for acquisition by the Crown; and
- contravenes the intent of the *Lakes and Rivers Improvement Act,* the ministry's hazard land policy, or the provincial flood plain policy.

IV APPLICATION

The ministry will apply the *Land Use Guidelines* by encouraging proper management of natural resources, carrying out projects on Crown lands and waters, assisting with the management of resources on private lands and lands owned by other agencies, and by providing information to other agencies and the public. It is important to note that this document has no legal status.

The ministry recognizes that private landowners, other government agencies, municipalities, conservation authorities and interest groups are key partners in any effort to achieve effective and integrated resource management. The Ministry of Natural Resources will continue to work with these groups, especially with municipalities, through the ministry's plan input and review program to ensure that resource values are considered in local planning documents.

The ministry recognizes that the control of land use on private land in municipalities is exercised by those municipalities under the authority of the *Planning Act* which is administered by the Ministry of Municipal Affairs and Housing.

It must be emphasized that the ministry is not seeking the specific designation or protection of large areas for resource management purposes. Within the areas identified, the district will try to protect adequate resources to meet targets to the year 2000 and beyond.

The *Land Use Guidelines* will be applied in the district through:

- Ministry of Natural Resources programs;
- working with other agencies; and
- working with landowners.

Direct action by this ministry is only possible on land it owns or manages. Public information, education and assistance programs are of the utmost importance in Niagara District given the limited Crown land area.

Mechanisms to be used in applying the *Land Use Guidelines* include:

- preparation and approval of resource management plans;
- planning and approval of specific ministry development projects;
- input to, and review of, municipal official plans, zoning by-laws, amendments, plans of subdivision and consent applications;
- review of specific development by other proponents on both Crown and private land;
- through specific conditions incorporated in permits, licences, leases, easements, etc., issued under the authority of provincial legislation e.g., the *Public Lands Act*, the *Lakes & Rivers Improvement Act*, and the *Game and Fish Act;*
- liaison and cooperation with other government ministries and public agencies; and
- education and extension programs with private landowners, municipalities and interest groups.

1. MINISTRY PROGRAMS

a. Planning Approval Procedure

To achieve the ministry's targets in Niagara District, all ministry resource management and operational plans must reflect the intent and direction of the *Land Use Guidelines*. A planning approval procedure has been established to ensure this occurs.

2. WORKING WITH OTHER AGENCIES

In southern Ontario, where the majority of the land is privately owned, the activities and plans of other agencies have a great influence on ministry programs. Good communication and co-ordination of planning activities with other agencies are necessary to effectively apply the *Land Use Guidelines*.

The General Resource Areas Map (Map 7) relates the Niagara District land base to proposed ministry strategies and other existing plans and agencies which control or influence land uses in these areas. The strategies for these general resource areas are summarized on Map 7. Detailed external co-ordination guidelines are listed in the Specific Policies chapter.

a. Municipalities
The *Niagara District Land Use Guidelines* will serve as one of the sources of information for district involvement in municipal planning.

The district will consult with municipal officials and private landowners where the *Land Use Guidelines* indicates that resources important to the achievement of ministry targets are located on private land. At this time the needs of all land users will be taken into consideration.

There will be occasions when the district feels that certain proposed developments on private land, while in conformity with municipal planning documents, will have a negative impact on important resources. Attempts will be made to resolve such situations through discussions with the proponent, the municipality and the Ministry of Municipal Affairs and Housing.

Good two-way communication and working relationships will be maintained through meetings, telephone conversations and correspondence. Changes in ministry policies, and proposed projects will be discussed.

Financial incentives and subsidy programs related to municipalities will continue to be made available wherever appropriate.

b. Conservation Authorities
Conservation authorities are independent corporate agencies set up jointly, under the *Conservation Authorities Act,* by the local municipalities and the Province of Ontario to develop and implement water-related land management programs.

The *Conservation Authorities Act* is administered on behalf of the Province of Ontario by the Ministry of Natural Resources.

There are three conservation authorities located wholly or partially in Niagara District: the Long Point Region, the Niagara Peninsula, and the Grand River Conservation Authorities. These authorities are presently completing watershed plans that will outline the long term direction of all authority programs. Assistance will be provided by the district in the preparation and implementation of watershed plans and other projects undertaken by these conservation authorities. Every effort will be made to reduce duplication and overlap of resource management activities so that the greatest possible benefits can be achieved.

Some revisions to this document may be required once watershed plans are completed, to adequately reflect the contributions of conservation authorities to this ministry's targets.

c. Niagara Escarpment Commission
The Niagara Escarpment Commission is preparing a plan for the designated portion of the Niagara Escarpment. The Ministry of Natural Resources has made considerable input to the Commission and there has been good cooperation between the two agencies. While the Niagara Escarpment plan is being finalized by the Ontario Government, the ministry will not undertake any action that would compromise the intent of the proposed plan. Once the plan is approved, the ministry will ensure that its programs are carried out in conformity with the plan.

d. Ontario Ministry of Agriculture and Food
The Ministry of Natural Resources recognizes the importance of agriculture. On private land, the district normally will not encourage or support activities or land uses which result in a long term loss of the amount of land in agricultural production. The district will encourage forestry, recreation and other compatible uses on high capability land presently not in agricultural production.

e. Ontario Ministry of the Environment
The Ministry of Natural Resources will cooperate with the Ministry of the Environment in meeting the requirements of the *Environmental Assessment Act* and will work closely with that ministry in monitoring impacts on the environment related to natural resources.

The two ministries have jointly developed guidelines, in this regard, related to water quality and fisheries issues.

The Ministry of Natural Resources has responsibility for identifying the fisheries values of waterbodies with respect to meeting the Ontario Government's fisheries mandate. This identification is based on the *Land Use Guidelines* and, as developed, fisheries management plans. The Ministry of the Environment is responsible for determining existing water quality and predicting the effects of proposed development on water quality. The latter information is used by the two ministries to assess potential effects on fisheries values.

f. Ontario Ministry of Citizenship and Culture
The Ministry of Natural Resources works in cooperation with the Ministry of Citizenship and Culture in the identification and protection of archaeological and historical resources on public land. The co-ordination occurs through regular liaison with heritage planners and field arch-

aeologists, and through requests for assistance when heritage conservation issues arise.

The ministry works closely with the Ontario Heritage Foundation, an agency of the Ministry of Citizenship and Culture, on projects related to protection of areas of natural and scientific interest.

3. WORKING WITH LANDOWNERS

The land in Niagara District is primarily privately owned. District staff must work closely with these landowners to maintain access to the resources needed by the people of Ontario, and encourage wise use of available resources. Emphasis will be given to the following programs and services:

- Public information programs will be offered to inform landowners of resource values and good management practices. These programs will include workshops, demonstrations, exhibits, news releases and distribution of literature;
- Scientific and technical advice, and extension services on activities such as tree planting and pond building will be provided. Field inspections will be made when necessary; and
- Landowners will be made aware of incentives for resource management.

APPENDIX

A: highlights of public consultation

In 1981, meetings were held with twelve municipalities and the Niagara Peninsula Conservation Authority to discuss the district's resource management activities and introduce the ministry's planning process. Information on the resource base was offered to the municipalities for incorporation into their planning documents.

The main thrust of the public consultation program began in May, 1982, with the announcement of two background information open houses to be held in June 1982 (Table 8). These open houses were to provide the general public with an overview of the ministry's role and responsibilities, and to assist them in the review of the draft *Niagara District Land Use Strategy* which was nearing completion. Approximately 190 people attended these open houses. Comments received from 103 people addressed the following issues: the need for more information on resources, maintaining trail access to crown land, the need for more parkland, increasing access to fish and wildlife resources, and, the need to protect agricultural land. Niagara District also participated in the Metro Toronto background open house hosted by Maple District.

In July, 1982, approximately 380 copies of the draft *Niagara District Land Use Strategy* were circulated to appropriate Members of the Provincial Legislative Assembly and Members of the House of Commons, municipalities, conservation authorities, interest groups and individuals. Two open houses to be held in August, 1982, were announced in local newspapers and by mail. Niagara took part in a second Metro Toronto open house in August.

The draft *Land Use Strategy* open houses were attended by approximately 130 people. Responses on the draft *Land Use Strategy* were received from 83 people, with a good cross-section of respondents (Table 9). Issues raised included: non-production woodlot values, excessive mineral aggregate area and target, aggregate/agriculture conflict, sports versus commercial fishing, provision of parkland, support for trail users, recognition of agricultural values, and the relationship between the *Land Use Strategy* and municipal planning documents.

Meetings were held in August with several agencies to review their comments and discuss means of incorporating their concerns into the revised document.

Based on the analysis and evaluation of all the public input received, this document was prepared. The Minister of Natural Resources reviewed a summary and analysis of public comment, and discussed the draft document with the District Manager.

Copies of all public responses are available for review at the district office the public reading room at the ministry's main office and the Legislative Library at Queen's Park.

TABLE 8 SUMMARY OF CONTACTS

Type of Contact	Number
No. of Background Information Open Houses	2(1)
Background Open House attendance	191
No. of Draft Strategy Open Houses	2(1)
Draft Strategy Open House attendance	129
Draft Strategies distributed	380
Comment Sheets distributed	140
Meetings with Municipalities — Background Information	12
— Draft Strategy	3
Meetings with Conservation Authorities — Background Information	1
— Draft Strategy	2
Meetings with Other Agencies — Draft Strategy	2
News Releases sent out — Background Information	20
— Draft Strategy	20
Newspaper Ads placed — Background Information	11
— Draft Strategy	15

(1) Number does not include Metro Toronto open house.

TABLE 9 SUMMARY OF RESPONSES

Response Documentation / Category of Respondent	Individual	Conservation Authority	Government Agency	M.P.P.	Municipality	Interest Group[1]	Industry[1] (Co. or Assoc.)	All Categories (Total)
Comments Prior to Open House	2	2	1	—	—	—	—	5
Background Open House								
• Comment Sheet	84	3	1	—	3	—	—	91
• Letter/Brief	4	—	—	—	—	3	—	7
Draft Strategy Open House								
• Comment Sheet	16	1	—	—	—	1	—	18
• Mailed Comment Sheet	11	—	—	—	—	—	—	11
• Letter/Brief	22	4	5	—	9	12	2	54
Total	139	10	7	—	12	16	2	186[2]

(1) The only responses which are included in the Interest Group and Industry columns are those which were received from official representatives.
(2) Responses received by November 1, 1982.

GLOSSARY

Areas of Natural and Scientific Interest
Areas of land and water containing natural landscapes or features that have values related to protection, natural heritage appreciation, scientific study or education.

Candidate Park
An area designated in Ministry of Natural Resources land use guidelines which may be given official status as a park at some time in the future.

Coldwater Habitat
Waterbodies having characteristics that support coldwater fish species, such as trout and whitefish.

Constraint
Existing or proposed land use, condition or regulation that restricts, limits or regulates ministry programs to some extent.

Crown Land
All land (including land under water) held by the province, both land which has never been sold and land which has been reacquired.

Earth Science Area
Public or private land where landforms of provincial interest have been identified.

Furbearers
Animals having commercially valuable pelts including beaver, mink, marten, otter, muskrat, fisher, fox, raccoon, wolf and lynx.

Goal
A general purpose to which the ministry aspires.

Habitat
The place or type of site where an animal or plant naturally or normally lives.

Hazard Land
Land, which because of its physical characteristics in combination with its location, presents a risk for its occupants including loss of life, property damage and social disruption (e.g., flooding).

High Potential
A resource or area which, based on both biophysical and planning considerations, is able to contribute significantly to target achievement.

Integrated Resource Management
The co-ordination of resource management programs to ensure that conflicts are minimized and that management which would benefit several programs is encouraged. Integrated management encourages multiple use, but recognizes that in some circumstances management of areas for a single purpose may be necessary.

Interim Property Management
To provide management of land acquired by the ministry until such time as management is assumed by the intended user group.

Land Use Guidelines
A document which displays direction concerning the use of land and water in a defined area. It identifies where and how the ministry intends to achieve its objectives in a specific district through the use of Crown land and through influencing the use of private land.

Life Science Area
Public or private land where a natural habitat of provincial interest has been identified.

Multiple Use
A resource management or planning concept applied to very large areas to indicate that all basic uses are accommodated. Typically, two or more uses may occur on the same general area at the same time or in sequence.

Natural Environment Park
An area incorporating outstanding recreational landscapes with representative natural features and historical resources to provide high quality recreational and educational experiences.

Objective
A quantifiable end result to be achieved.

Occasion
A measure of actual recreational use describing the number of times a recreation resource or facility is used by individuals in a given period. An occasion is considered not to exceed one day in duration.

Opportunity
A measure of recreation supply. It is used to describe the number of times a resource or facility can be used (occasions of use) in a given time period. An opportunity is considered not to be greater than one day.

Policy
A decision concerning the objectives to be achieved and the means of achieving them.

Program
An activity undertaken by the ministry to provide a service or manage a particular resource.

Public Consultation
The public concerned with the planning area take part in the planning process, rather than just reacting to decisions made.

Public Land
Any land owned or administered by a public body or agency. It includes federal, provincial and municipally owned lands and lands held by agencies such as parks commissions and conservation authorities.

Recreation Park
An area which supports a wide variety of outdoor recreation opportunities for large numbers of people in attractive surroundings.

Resource Management
The wise use of a particular resource to achieve specific ends.

Resource Management Plan
A plan by which the policies, objectives and targets usually of an individual program (except in the case of an integrated resource management plan) are implemented for a specific resource.

Sequential Use
Where one use is followed by another in planned sequence.

Site District
A fairly large subdivision of a site region based on a characteristic pattern of climate and land form features.

Site Region
An area of land within which the response of vegetation to the features of landform follow a consistent pattern. Each specific type of land (defined in terms of relief, soil, texture, depth and drainage) within a specific site region has its characteristic plant succession.

Sport Fish
For the purpose of this document sport fish are the top predator species sought by anglers.

Strategy
Planned actions or measures to achieve a desired end.

Target
A quantified end to be achieved or completed by a specific date.

Waterway Park
An area of outstanding recreational water routes with representative natural features and historical resources to provide high quality recreational and educational experiences.

Wetlands
Lands which are permanently or seasonally covered with shallow water and where distinctive soil conditions, plant and wildlife communities develop. These include wetland forests (swamps), wetland thickets, marshes, bogs and fens.

Map 7

NIAGARA DISTRICT

GENERAL RESOURCE AREAS

LEGEND

- Local Municipal Boundary
- Regional Municipal Boundary
- MNR District Boundary
- Area Boundary
- R Area Code
- U Urban and Urbanizing Area
- Area of the Proposed Niagara Escarpment Plan

0 5 10 15 20 25 Kilometres

0 4 8 12 16 Miles

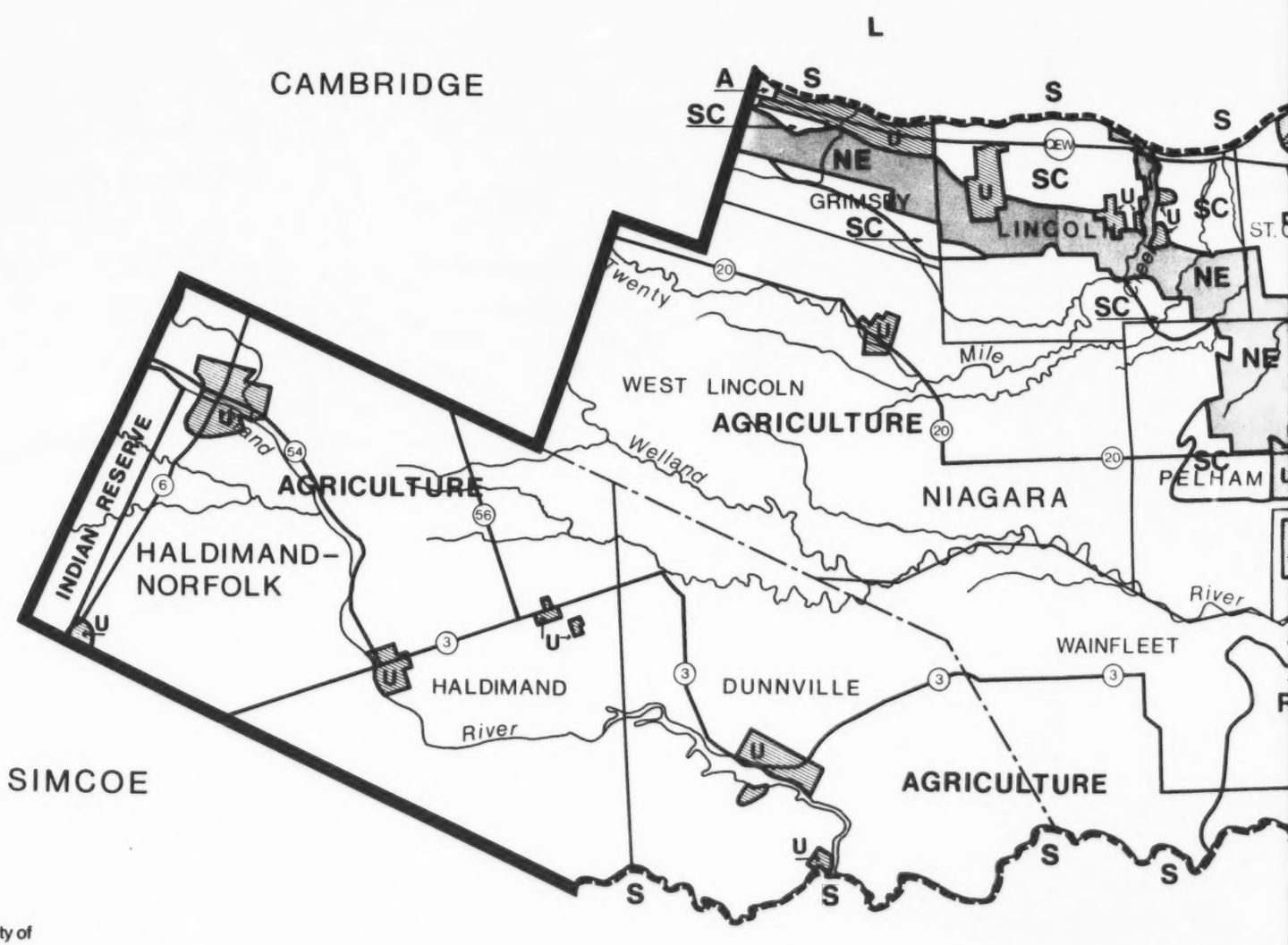
SCALE 1:250,000

N

Ontario Ministry of Natural Resources

Hon. Alan W. Pope, Minister

W. T. Foster, Deputy Minister



A AGRICULTURE

Area Description

This area includes important agricultural resource lands where agriculture is the primary land use. The majority of this area is located in the central and western part of the district. Natural resources such as mineral aggregate, woodlots, marshes and fisheries are scattered throughout this area. The abundance of these natural resources makes this area important for meeting district production targets.

Resource Management Policies

Co-ordination of ministry programs with agricultural interests will be essential to achieve natural resource objectives in this area. The potential for conflict between various land uses can be reduced by integrating resource interests and incorporating long-term, sequential use concepts in resource management plans. For example, mineral aggregate extraction areas can, in many cases, be rehabilitated for agriculture. Many resource user

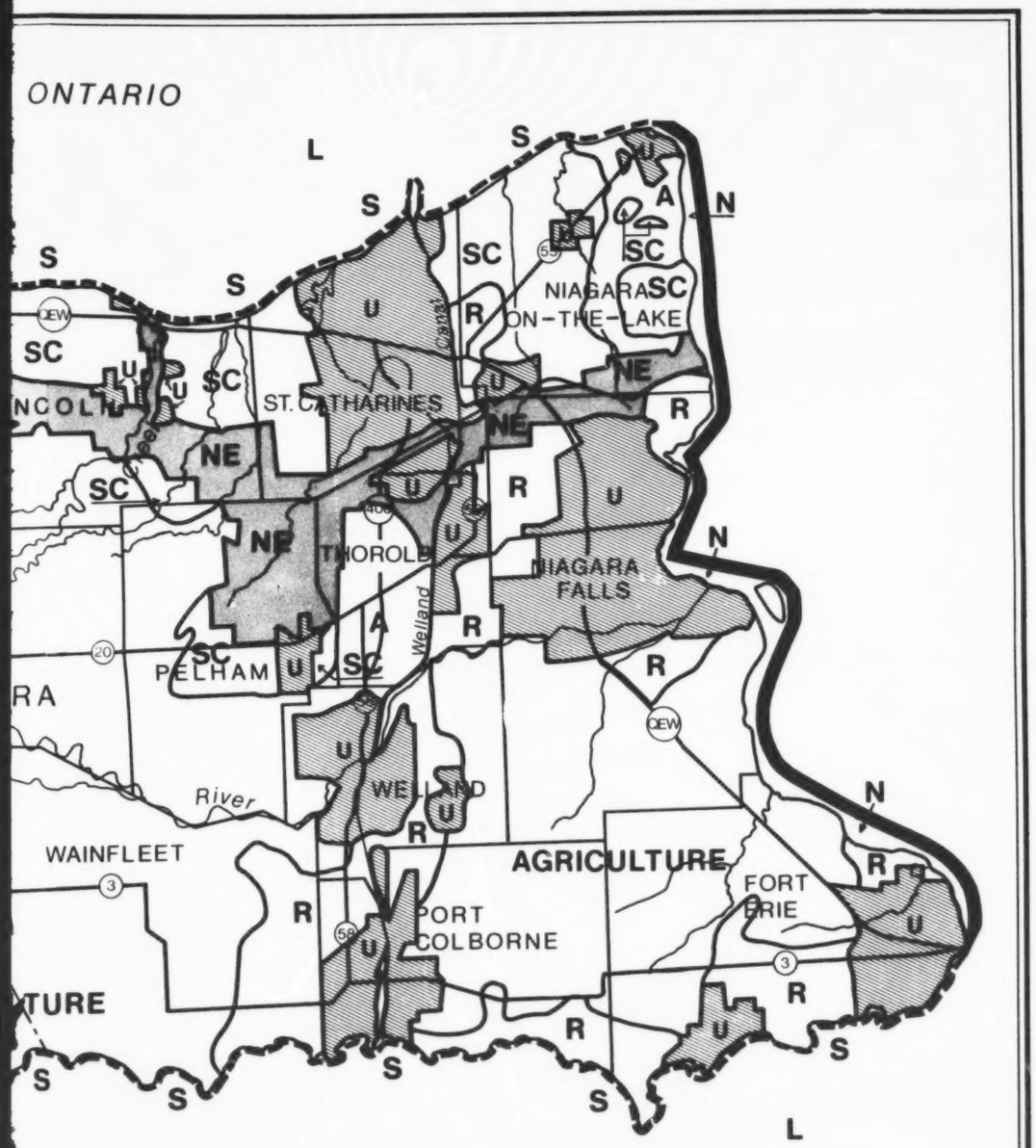
Resource Management Policies

Maintenance and improvement of the natural resources will be pursued in co-operation with the Niagara Parks Commission, the Ministry of the Environment and other appropriate agencies. Fish and wildlife populations will be

S SHORELINES OF LAKE O

Area Description

The Lake Ontario and Lake Erie sho
which link the land and water-based
management of these resources. Th
the land under water (i.e., bed of lak
has a responsibility for public



S SHORELINES OF LAKE ONTARIO AND LAKE ERIE

Area Description

The Lake Ontario and Lake Erie shorelines are those areas in the district between high and low water lake levels which link the land and water-based resources. Access via the shoreline is important to the wise use and management of these resources. The wetlands found in this area are critical to fish and wildlife populations. Most of the land under water (i.e., bed of lake) is Crown land which this ministry has a mandate to manage. The ministry also has a responsibility for public safety in shoreline areas susceptible to erosion and flooding.

Management Policies

Ontario Resources — W. T. Foster, Deputy Minister

SIMCOE

A AGRICULTURE

Area Description

This area includes important agricultural resource lands where agriculture is the primary land use. The majority of this area is located in the central and western part of the district. Natural resources such as mineral aggregate, woodlots, marshes and fisheries are scattered throughout this area. The abundance of these natural resources makes this area important for meeting district production targets.

Resource Management Policies

Co-ordination of ministry programs with agricultural interests will be essential to achieve natural resource objectives in this area. The potential for conflict between various land uses can be reduced by integrating resource interests and incorporating long-term, sequential use concepts in resource management plans. For example, mineral aggregate extraction areas can, in many cases, be rehabilitated for agriculture. Many resource user activities are compatible with agricultural practices and can be undertaken at the same time.

The ministry will attempt to maintain access to resources present in the area and to provide guidance as to the wise use of these resources. Efforts will also be directed to the rehabilitation and expansion of resources where appropriate.

IR INDIAN RESERVE

This area includes the Tuscarora Indian Reserve. Indian reserve lands are not considered in the *Land Use Guideline's* resource analysis.

L LAKE ERIE AND LAKE ONTARIO

Area Description

This area includes the water area and beds of Lake Erie and Lake Ontario up to the water's edge. Lake Erie and Lake Ontario contain important fisheries, provide recreational opportunities and contain potential mineral aggregate and petroleum resources. While a large surface area of water exists in the lakes, the majority of resource interests are focused on the near-shore waters. This concentration of interests increases the potential for conflicts among resource users.

Resource Management Policies

The management of resources in the Great Lakes requires co-operation among federal, provincial and municipal levels of government and liaison between Canadian and United States governments. Management activites undertaken by this ministry will be co-ordinated with the appropriate agencies. Efforts will be made to maintain or improve resources and user-opportunities currently present, with special emphasis on the rehabilitation of the Great Lakes fisheries. Fisheries management will be co-ordinated through the Lake Erie and Lake Ontario Fisheries Management Committees.

The Ministry of Natural Resources will continue to enforce the existing international agreement on oil and gas extraction on the Great Lakes. Currently, only gas extraction is permitted in Lake Erie.

N NIAGARA RIVER

Area Description

The Niagara River area contains resources important to Niagara District and all of Ontario. Hydro-electric power is produced at Niagara Falls. The Niagara Falls area is a major tourism destination. The Niagara River provides important habitat for sport and bait fish, wildlife and waterfowl and offers associated recreational opportunities. Significant areas of natural and scientific interest are also located in the area.

Ownership of the Niagara River is divided between Canada and the United States. A major portion of the Canadian side of the river is under the jurisdiction of the Niagara Parks Commission.

L

Resource Management Policies

Maintenance and improvement of the natural resources will be pursued in co-operation with the Niagara Parks Commission, the Ministry of the Environment and other appropriate agencies. Fish and wildlife populations will be monitored to determine the quantity and quality of the resource available. Attempts will be made to co-ordinate management efforts with natural resources agencies on the United States' side of the river.

NE AREA OF THE PROPOSED NIAGARA ESCARPMENT PLAN

Area Description

This unit covers the area included in *The Proposed Plan for the Niagara Escarpment*. The area is of great importance to the ministry because of its extensive forest cover, wildlife and fisheries habitat, mineral aggregate potential and its significant areas of natural and scientific interest. The ministry also has landholdings (e.g., Short Hills Candidate Provincial Park) in the escarpment area. These natural resource values are reflected to a large extent in the proposed escarpment plan.

Resource Management Policies

The escarpment will continue to be one of the most important areas for the ministry's management activities. Although this management will be directed at achieving ministry objectives, it must also be done in the context of the Niagara Escarpment plan. While the Niagara Escarpment plan is being finalized, the ministry will not undertake any actions that would compromise the intent of the plan. Once the plan is approved, the ministry will ensure that its programs are carried out in conformity with the plan.

Special attention will be given to the headwaters of the Twelve Mile Creek watershed, which is the source of the only cold water stream in the district, contains significant mineral aggregates, is the site of a candidate provincial park and contains good agricultural land.

R RURAL

Area Description

Rural areas are mainly located adjacent to urban and urbanizing areas in conjunction with agricultural areas. Soil quality and non-farm related development may preclude agricultural activities. Important natural resources located in this area include wetlands such as the Wainfleet Marsh, petroleum resources, mineral aggregates and recreational opportunities.

Resource Management Policies

Resources located in the rural areas are fairly susceptible to the impacts of development including the fragmentation or loss of resources. In rural areas, the district will encourage landowners and the municipality to:

—maintain access to resources,
—integrate land uses, and
—obtain optimum use of resources through long-term, sequential plans.

In high potential mineral aggregate resource areas, it is especially important to consider the value of the aggregate present and extract it, if determined necessary, prior to development proceeding.

S SHORELINES OF LAKE O

Area Description

The Lake Ontario and Lake Erie shor
which link the land and water-based
management of these resources. The
the land under water (i.e., bed of lake
has a responsibility for public safety

Resource Management Policies

The district will continue to regulate
use of shoreline resources while mai
review, and information and educatio
areas susceptible to flooding and ero
existing shoreline problems and to a

SC SPECIALTY CROPS

Area Description

This area contains special soils and c
Iroquois Plain along Lake Ontario, an
area also contains a number of impor
water fisheries and a variety of wildlif

Resource Management Policies

The ministry recognizes the main use
activities which conform to the Minist
agricultural land uses of the area will

U URBAN AND URBANIZING

Area Description

This area includes the main areas wh
developed within the next twenty yea
Colborne, Fort Erie and Niagara-on-t
with the backyard wildlife habitat and

Resource Management Policies

Urban development will severely limit
inaccessible, fragmented, and availab
and urbanizing areas have been remo
have high potential for resource mana
Urban areas do provide some backya
shorelines, and passive forestry value
maintain or improve the existing reso
natural hazards, such as flooding and
communities.

S S S L

S SHORELINES OF LAKE ONTARIO AND LAKE ERIE

Area Description

The Lake Ontario and Lake Erie shorelines are those areas in the district between high and low water lake levels which link the land and water-based resources. Access via the shoreline is important to the wise use and management of these resources. The wetlands found in this area are critical to fish and wildlife populations. Most of the land under water (i.e., bed of lake) is Crown land which this ministry has a mandate to manage. The ministry also has a responsibility for public safety in shoreline areas susceptible to erosion and flooding.

Resource Management Policies

The district will continue to regulate the use of Crown shoreland with a goal of providing multiple and co-ordinated use of shoreline resources while maintaining access to other resources. Efforts will be made, through plan input and review, and information and education programs, to minimize property damage, loss of life and social disruption in areas susceptible to flooding and erosion. Shoreline studies will be undertaken to provide an overall perspective on existing shoreline problems and to assist in managing the shoreline as an ecosystem rather than fragmented parts.

SC SPECIALTY CROPS

Area Description

This area contains special soils and climatic conditions capable of producing tender fruit and grape crops. The Iroquois Plain along Lake Ontario, and the Fonthill Kame are the main specialty crop areas in Niagara District. The area also contains a number of important watercourses and drowned river mouths which provide warm and cold water fisheries and a variety of wildlife habitats. The Fonthill Kame is a high potential sand and gravel resource.

Resource Management Policies

The ministry recognizes the main use of these lands is for specialty crops. Only those resources management activities which conform to the Ministry of Agriculture and Food's "Foodland Guidelines" and complement the agricultural land uses of the area will be supported by this ministry.

U URBAN AND URBANIZING

Area Description

This area includes the main areas which are currently urban or, because of official plan designations, will likely be developed within the next twenty years. Much of the eastern part of the district, between St. Catharines, Port Colborne, Fort Erie and Niagara-on-the-Lake, is urbanized. The most significant resource values are connected with the backyard wildlife habitat and shorelines found in these areas.

Resource Management Policies

Urban development will severely limit the potential for resource management in this area. Many resources are inaccessible, fragmented, and available for management only on a short-term basis. Most resources in the urban and urbanizing areas have been removed from the program strategy maps because they cannot be considered to have high potential for resource management.

Urban areas do provide some backyard wildlife habitat, recreational opportunities in open spaces and along shorelines, and passive forestry values. The district will provide assistance to landowners and municipalities to maintain or improve the existing resources and the access to these resources. The district will seek to ensure that natural hazards, such as flooding and erosion, are considered in new urban development, especially in shoreline communities.